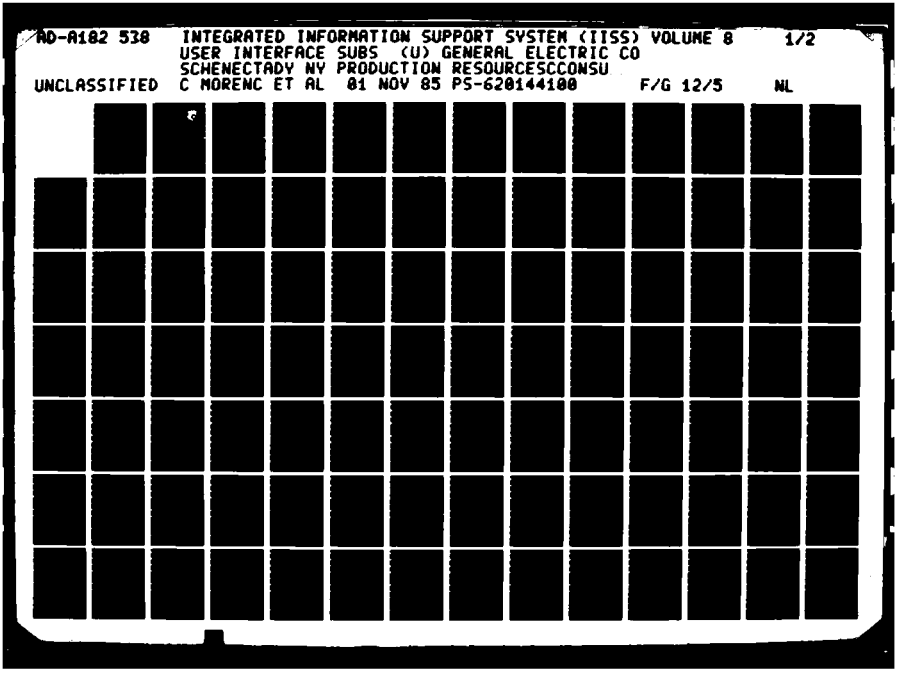
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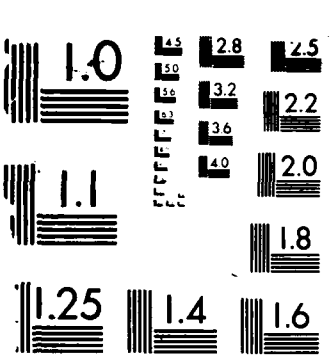

AFWAL-TR-86-4006
Volume VIII
Part 3

# INTEGRATED INFORMATION SUPPORT SYSTEM (IISS)
## Volume VIII - User Interface Subsystem
## Part 3 - User Interface Services Product Specification

General Electric Company
Production Resources Consulting
One River Road
Schenectady, New York 12345

Final Report for Period 22 September 1980 - 31 July 1985

November 1985

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PREPARED FOR:

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*DATE*

*FOR THE COMMANDER*

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19 ABSTRACT (Continue on reverse if necessary and identify by block number)

This specification establishes the detailed design of a collection of form-based applications identified as the User Interface Services (UIS). The UIS is a collection of applications that use the Form Processor. Each application is individually accessed by filling its name in the function item on the IISS Function Screen. Each application presents a form to the user which must be filled in with information for processing by that application. The application then communicates with the Form Processor through messages created and sent by the Application Interface and handled by the User Interface Monitor of the Form Processor.

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**Integrated Information Support System (IISS)**
**Vol VIII - User Interface Subsystem**
**Part 3 - User Interface Services Product Specification**

## PREFACE

This product specification covers the work performed under Air Force Contract F33615-80-C-5155 (ICAM Project 6201). This contract is sponsored by the Materials Laboratory, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio. It was administered under the technical direction of Mr. Gerald C. Shumaker, ICAM Program Manager, Manufacturing Technology Division, through Project Manager, Mr. David Judson. The Prime Contractor was Production Resources Consulting of the General Electric Company, Schenectady, New York, under the direction of Mr. Alan Rubenstein. The General Electric Project Manager was Mr. Myron Hurlbut of Industrial Automation Systems Department, Albany, New York.

Certain work aimed at improving Test Bed Technology has been performed by other contracts with Project 6201 performing integrating functions. This work consisted of enhancements to Test Bed software and establishment and operation of Test Bed hardware and communications for developers and other users. Documentation relating to the Test Bed from all of these contractors and projects have been integrated under Project 6201 for publication and treatment as an integrated set of documents. The particular contributors to each document are noted on the Report Documentation Page (DD1473). A listing and description of the entire project documentation system and how they are related is contained in document FTR620100001, Project Overview.

The subcontractors and their contributing activities were as follows:

TASK 4.2

| Subcontractors | Role |
|---|---|
| Boeing Military Aircraft Company (BMAC) | Reviewer |
| D. Appleton Company (DACOM) | Responsible for IDEF support, state-of-the-art literature search |
| General Dynamics/ Ft. Worth | Responsible for factory view function and information models |

| Subcontractors | Role |
|---|---|
| Illinois Institute of Technology | Responsible for factory view function research (IITRI) and information models of small and medium-size business |
| North American Rockwell | Reviewer |
| Northrop Corporation | Responsible for factory view function and information models |
| Pritsker and Associates | Responsible for IDEF2 support |
| SofTech | Responsible for IDEF0 support |

TASKS 4.3 - 4.9 (TEST BED)

| Subcontractors | Role |
|---|---|
| Boeing Military Aircraft Company (BMAC) | Responsible for consultation on applications of the technology and on IBM computer technology. |
| Computer Technology Associates (CTA) | Assisted in the areas of communications systems, system design and integration methodology, and design of the Network Transaction Manager. |
| Control Data Corporation (CDC) | Responsible for the Common Data Model (CDM) implementation and part of the CDM design (shared with DACOM). |
| D. Appleton Company (DACOM) | Responsible for the overall CDM Subsystem design integration and test plan, as well as part of the design of the CDM (shared with CDC). DACOM also developed the Integration Methodology and did the schema mappings for the Application Subsystems |

| Subcontractors | Role |
|---|---|
| Digital Equipment Corporation (DEC) | Consulting and support of the performance testing and on DEC software and computer systems operation. |
| McDonnell Douglas Automation Company (McAuto) | Responsible for the support and enhancements to the Network Transaction Manager Subsystem during 1984/1985 period. |
| On-Line Software International (OSI) | Responsible for programming the Communications Subsystem on the IBM and for consulting on the IBM. |
| Rath and Strong Systems Products (RSSP) (In 1985 became McCormack & Dodge) | Responsible for assistance in the implementation and use of the MRP II package (PIOS) that they supplied. |
| SofTech, Inc. | Responsible for the design and implementation of the Network Transaction Manager (NTM) in 1981/1984 period. |
| Software Performance Engineering (SPE) | Responsible for directing the work on performance evaluation and analysis. |
| Structural Dynamics Research Corporation (SDRC) | Responsible for the User Interface and Virtual Terminal Interface Subsystems. |

Prime contractors under other projects who have contributed to Test Bed Technology, their contributing activities and responsible projects are as follows:

| Contractors | ICAM Project | Contributing Activities |
|---|---|---|
| Boeing Military Aircraft Company (BMAC) | 1701, 2201, 2202 | Enhancements for IBM node use. Technology Transfer to Integrated Sheet Metal Center (ISMC) |

| Contractors | ICAM Project | Contributing Activities |
|---|---|---|
| Control Data Corporation (CDC) | 1502, 1701 | IISS enhancements to Common Data Model Processor (CDMP) |
| D. Appleton Company (DACOM) | 1502 | IISS enhancements to Integration Methodology |
| General Electric | 1502 | Operation of the Test Bed and communications equipment. |
| Hughes Aircraft Company (HAC) | 1701 | Test Bed enhancements |
| Structural Dynamics Research Corporation (SDRC) | 1502, 1701, 1703 | IISS enhancements to User Interface/Virtual Terminal Interface (UI/VTI) |
| Systran | 1502 | Test Bed enhancements. Operation of Test Bed. |

# TABLE OF CONTENTS

## FIGURES

# SECTION 1

# SCOPE

## 1.1 Identification

This specification establishes the detailed design of a collection of form-based applications identified as the User Interface Services, hereinafter referred to as UIS. The UIS is one configuration item of the Integrated Information Support System (IISS) User Interface (UI).

## 1.2 Functional Summary

The UIS is a collection of applications that use the Form Processor. Each application is individually accessed by filling its name in the function item on the IISS Function Screen. Each application presents a form to the user which must be filled in with information for processing by that application. The application then communicates with the Form Processor through messages created and sent by the Application Interface and handled by the UIM (User Interface Monitor) of the Form Processor.

# SECTION 2

# DOCUMENTS

## 2.1 Reference Documents

[1] Structural Dynamics Research Corporation, Application Interface Product Specification, PS 620144700 , 1 November 1985.

[2] Structural Dynamics Research Corporation, Forms Driven Form Editor Product Specification, PS 620144402 , 1 November 1985.

[3] Structural Dynamics Research Corporation, Forms Language Compiler Product Specification, PS 620144401 , 1 November 1985.

[4] Structural Dynamics Research Corporation, Form Processor Product Specification, PS 620144200 , 1 November 1985.

[5] Structural Dynamics Research Corporation, Rapid Application Generator Product Specification, PS 620144502 , 1 November 1985.

[6] Structural Dynamics Research Corporation, Report Writer Product Specification, PS 620144501 , 1 November 1985.

[7] Structural Dynamics Research Corporation, Text Editor Product Specification, PS 620144600 , 1 November 1985.

[9] Structural Dynamics Research Corporation, Virtual Terminal Product Specification, PS 620144300 , 1 September 1985.

[10] Structural Dynamics Research Corporation, User Interface Services Development Specification, DS 620144100B, 1 November 1985.

[12] Structural Dynamics Research Corporation, User Interface Services Unit Test Plan, UTP620144100 , 1 November 1985.

[13] Structural Dynamics REsearch Corporation, IISS Terminal Operator Guide, OM 620144000 , 1 November 1985.

## 2.2 Terms and Abbreviations

Application Interface: (AI), subset of the IISS User Interface that consists of the callable routines that are linked with applications that use the Form Processor or Virtual Terminal. The AI enables applications to be hosted on computers other than the host of the User Interface.

Application Process: (AP), a cohesive unit of software that can be initiated as a unit to perform some function or functions.

Form: structured view which may be imposed on windows or other forms. A form is composed of fields. These fields may be defined as forms, items, and windows.

Form Definition: (FD), forms definition language after compilation. It is read at runtime by the Form Processor.

Forms Definition Language: (FDL), the language in which electronic forms are defined.

Forms Driven Form Editor: (FDFE), subset of the FE which consists of a forms driven application used to create Form Definition files interactively.

Form Editor: (FE), subset of the IISS User Interface that is used to create definitions of forms. The FE consists of the Forms Driven Form Editor and the Forms Language Compiler.

Forms Language Compiler: (FLAN), subset of the FE that consists of a batch process that accepts a series of forms definition language statements and produces form definition files as output.

Form Processor: (FP), subset of the IISS User Interface that consists of a set of callable execution time routines available to an application program for form processing.

IISS Function Screen: the first screen that is displayed after logon. It allows the user to specify the function he wants to access and the device type and device name on which he is working.

Integrated Information Support System: (IISS), a test computing environment used to investigate, demonstrate and test the concepts of information management and information integration in the context of Aerospace Manufacturing. The IISS addresses the problems of integration of data resident on heterogeneous data bases supported by heterogeneous computers interconnected via a Local Area Network.

Presentation Schema: (PS), may be equivalent to a form. It is the view presented to the user of the application.

User Data: data which is either input by the user or output by the application programs to items.

User Interface: (UI), IISS subsystem that controls the user's terminal and interfaces with the rest of the system. The UI consists of two major subsystems: the User Interface Development System (UIDS) and the User Interface Management System (UIMS).

User Interface Development System: (UIDS), collection of IISS User Interface subsystems that are used by applications programmers as they develop IISS applications. The UIDS includes the Form Editor and the Application Generator.

User Interface Management System: (UIMS), the runtime UI. It consists of the Form Processor, Virtual Terminal, Application Interface, the User Interface Services and the Text Editor.

User Interface Services: (UIS), subset of the IISS User Interface that consists of a package of routines that aid users in controlling their environment. It includes message management, change password, and application definition services.

User Interface/Virtual Terminal Interface: (UI/VTI), another name for the User Interface.

Virtual Terminal: (VT), subset of the IISS User Interface that performs the interfacing between different terminals and the UI. This is done by defining a specific set of terminal features and protocols which must be supported by the UI software which constitutes the virtual terminal definition. Specific terminals are then mapped against the virtual terminal software by specific software modules written for each type of real terminal supported.

Window: dynamic area of a terminal screen on which predefined forms may be placed at run time.

Window Manager: a facility which allows the following to be manipulated: size and location of windows, the device on which an application is running, the position of a form within a window. It is part of the Form Processor.

# SECTION 3

# REQUIREMENTS

## 3.1 Structural Description

The UIS consists of independent IISS programs which may be invoked from the IISS Function Screen. The UIS provides the following independent applications:

1) Define Application
2) Change Password
3) Message Management

### 3.1.1 Define Application

The following figure shows the basic architecture of the Define Application application:

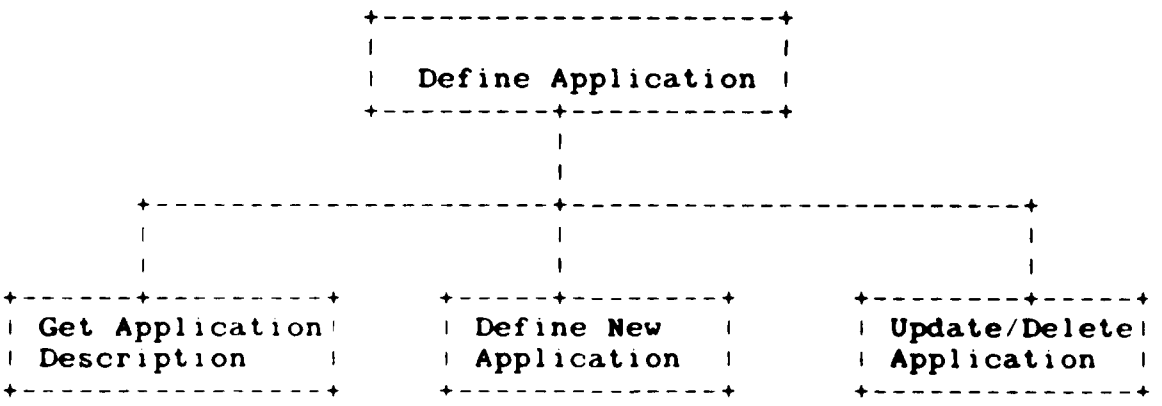



Figure 3-1 Basic Architecture of Define Application

The main module determines whether the entered application name is new or already exists. If it exists, then the application description is retrieved from the APPL table. The user may then modify or delete the application definition. Upon modification, the application's entry is modified in the APPL table. Upon deletion, the application's entry is deleted from the APPL table. Also, upon deletion, the application's entry in the ROLAPP table is also deleted. If the application is new, then the Define Application subfunction inserts the application into the APPL table

### 3.1.2 Change Password

This application consists of two modules. The main module processes the application form. It retrieves the data from the form and verifies the input. Upon successful verification of password information, it calls the second module to update the user's entry in the UIUSER table. After update, it informs the user of the success of the update.

### 3.1.3 Message Management

In the VAX environment, the files that are updated are located in the directory pointed to by the logical IISSMLIB and have the format MSGXXX.MSG where XXX is the message base number. A new version of the MSGXXX.MSG file is created every time a new base number is chosen or an existing base number is updated. These message files should be purged so that several versions of the same file do not exist.

The record format of the MSGXXX.MSG file is the message number followed by the message name and then the message description. These files may then be used as input to a program called INCGEN. This program produces an include file in the language specified when the INCGEN program was executed. The include files can be generated in C, Cobol, PLI, or Fortran. The include file may then be used in the application for which this message base was defined

## 3.2 Functional Flow

### 3.2.1 Define Application

Figure 3-2 is a data flow diagram of Define Application

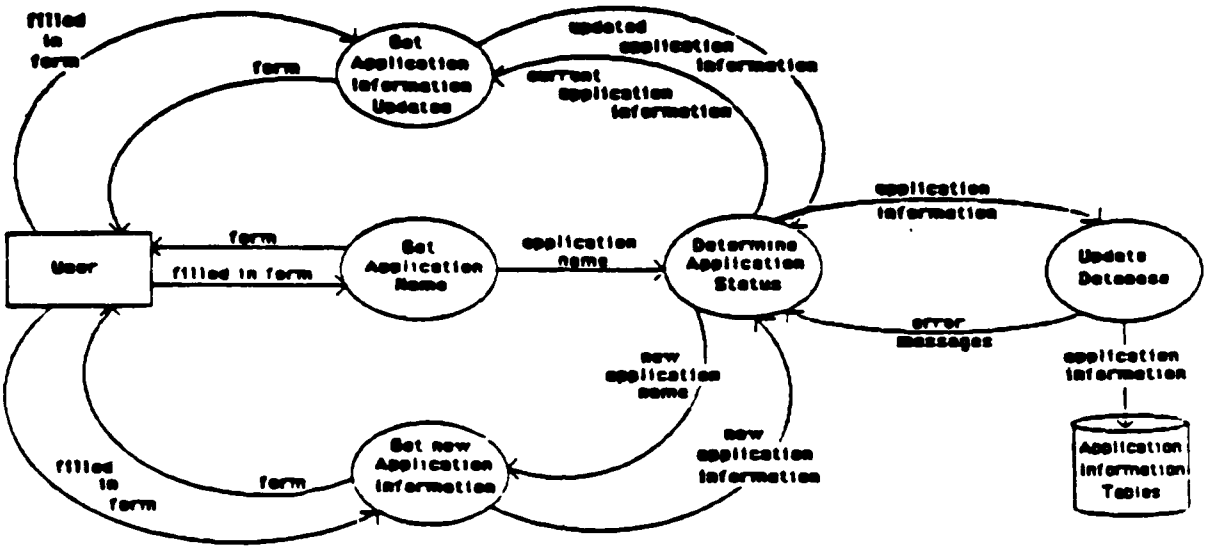



Figure 3-2 Define Application Data Flow

### 3.2.2 Change Password

Figure 3-3 is a data flow diagram of Change Password.

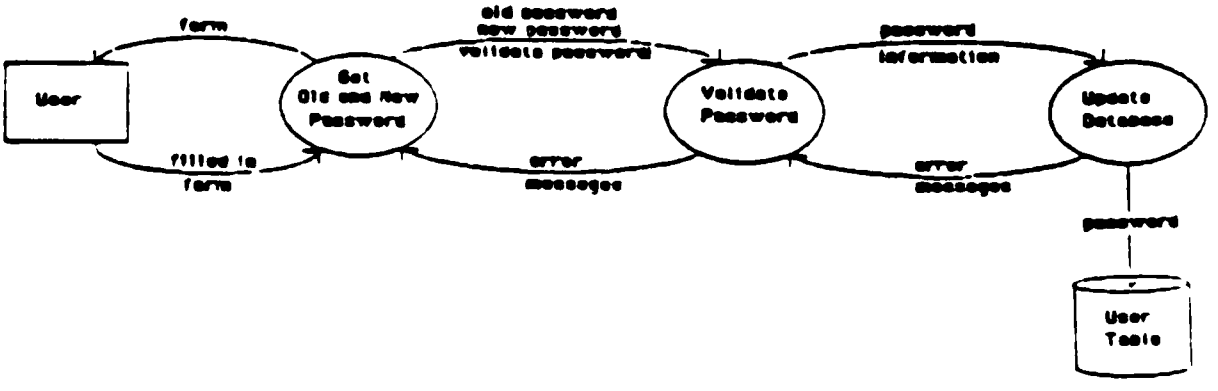



Figure 3-3 Change Password Data Flow

### 3.2.3 Message Management

Figure 3-4 is a data flow for Message Management.

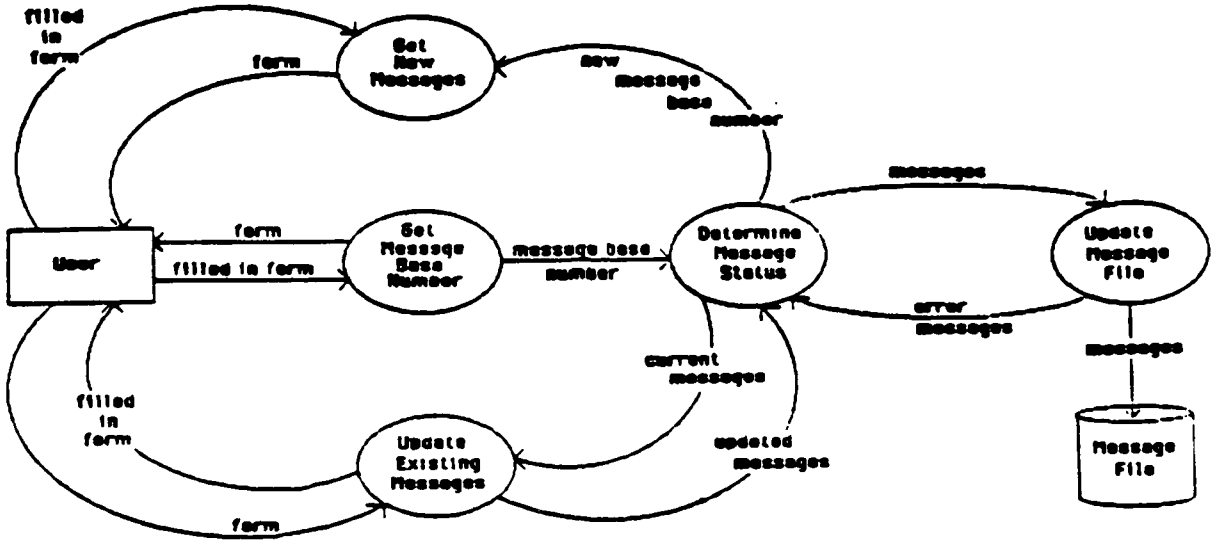



Figure 3-4 Message Management Data Flow

#### 3.2.3.1 INCGEN

Figure 3-5 is a data flow diagram for INCGEN.

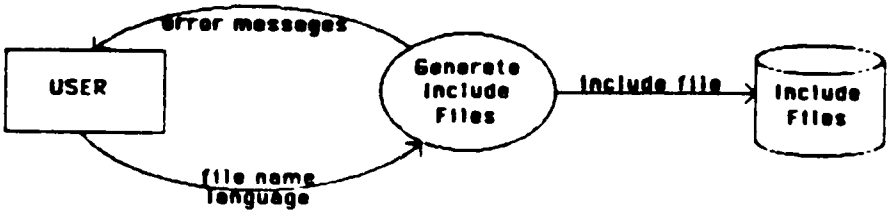



Figure 3-5 INCGEN Data Flow

## 3.3 Interfaces

### 3.3.1 Form Processor

Define Application, Change Password and Message Management interface with the Form Processor through calls to the Application Interface (AI). The AI routines translate the application request into the NTM message format and then send the message that contains the application request data to the User Interface Monitor.

### 3.3.2 UIM

The UIM, which is the main control program for the Form Processor, calls the appropriate FP routine when a message is received from a UIS application. The UIM then returns the output parameters to the UIS application.

### 3.3.3 NTM

The UIS applications must use the NTM initialization routine, INITAL and the NTM termination routine, TRMNAT.

## 3.4 Program Interrupts

This section does not apply to the detailed design of the User Interface Service applications.

## 3.5 Timing and Sequencing Description

The UIS applications are initiated through the IISS Function Screen presented to the user after logging on correctly to the IISS. Each application accepts input from and returns output to the user's terminal via application defined forms.

Specific functions within the User Interface Services permit the user to create, maintain and delete commands which are used to run application programs. Utility functions also exist for changing the user's password and for managing error messages for application development.

## 3.6 Special Control Features

The detailed design of the User Interface Services does not include any special control features as defined in the ICAM Documentation Standards manual

## 3.7 Storage Allocation

The executable sizes for Define Application, Change Password, Message Management and INCGEN are:

| | |
|---|---|
| Define Application | 268 blocks |
| Change Password | 237 blocks |
| Message Management | 130 blocks |
| INCGEN | 65 blocks |

### 3.7.1 Data Base Definition

#### 3.7.1.1 File Descriptions

The following files are used by the Message Management application.

1. FILE NAME: MSGxxx.MSG

   PURPOSE: This file contains message codes and descriptions used by the FP routine PMSGLC. The XXX in the name of the file corresponds to the first three numbers in the message codes.

   DECLARATION:

```
typdef struct
{
   char number[5];
   char name[8];
   char descrip[60];
} MSGLIN
```

2. FILE NAME: user specified

   PURPOSE: This file is generated by the program INCGEN. It is used by application programs that call the FP routine PMSGLC. It enables application code to be independent of the message code values sine it provides variable names for the values. This file may be generated in COBOL, Fortran, C, or PLI.

DECLARATION:

The following is a sample include file generated by INCGEN:

```
01  OK          PIC X(5) VALUE '70000'.
01  FPMSGS      PIC X(5) VALUE '70300'.
01  INVPAG      PIC X(5) VALUE '70301'.
01  FNOTFND     PIC X(5) VALUE '70302'.
01  FISOPEN     PIC X(5) VALUE '70303'.
01  ALCERR      PIC X(5) VALUE '70304'.
01  OPNERR      PIC X(5) VALUE '70305'.
01  EXPERR      PIC X(5) VALUE '70306'.
01  TRNCFLD     PIC X(5) VALUE '70307'.
01  UNKTYPE     PIC X(5) VALUE '70308'.
01  PNOTARY     PIC X(5) VALUE '70309'.
01  NILKEY      PIC X(5) VALUE '70310'.
01  SYSERR      PIC X(5) VALUE '70311'.
01  PBFULL      PIC X(5) VALUE '70312'.
01  INVEDT      PIC X(5) VALUE '70313'.
01  FILRERR     PIC X(5) VALUE '70314'.
01  PATHERR     PIC X(5) VALUE '70315'.
01  NOMACH      PIC X(5) VALUE '70316'.
01  PNOTFND     PIC X(5) VALUE '70317'.
01  WRDWRAP     PIC X(5) VALUE '70318'.
01  INVMRG      PIC X(5) VALUE '70319'.
01  PNOTUNQ     PIC X(5) VALUE '70320'.
```

3.7.1.2 Table Description

Only the Define Application and the Change Password UIS applications use the relational database management system ORACLE. The Message Management UIS application uses VAX files. The following table descriptions show the ORACLE database. Some of these tables are used by the UIM of the Form Processor. For completeness and to show the relationships between the tables and views, all have been presented here.

The data base contains four tables and two views:

(1) UIUSER contains information about users.

(2) APPL contains information about applications.

(3) USEROL relates users to roles.

(4) ROLAPP relates roles to applications.

(5) ROLAPT is a view relating roles to application information. It is used to retrieve information for the HELP form.

(6) LOGON is a view relating user information to roles. It is used to verify logon data.

3.7.1.2.1 Relationship Between Tables and Views

The following illustrates the relationship between the various tables and views. The symbol ‹--› indicates that two columns contain the same type of data. The symbol * denotes key fields. Names enclosed in parentheses are the names of tables from which data is actually retrieved.

TABLES

| UIUSER | | USEROL | | ROLAPP | | APPL |
|---|---|---|---|---|---|---|
| * USERID | ‹--› | * USERID | | | | |
| NAME | | * ROLE | ‹--› | * ROLE | | |
| PSWORD | | | | * APPLID | ‹--› | * APPLID |
| | | | | | | DESCRP |
| | | | | | | TYP |
| | | | | | | HOST |
| | | | | | | WKSTAT |
| | | | | | | COM1 |
| | | | | | | COM2 |
| | | | | | | . |
| | | | | | | . |
| | | | | | | COM10 |

VIEWS

| ROLAPT | | LOGON | |
|---|---|---|---|
| ROLE | (ROLAPP) | USERID | (USEROL) |
| APPLID | (ROLAPP) | ROLE | (USEROL) |
| DESCRP | (APPL) | PSWORD | (UIUSER) |
| TYP | (APPL) | | |

3.7.1.2.2 Detailed Description of Tables and Views

The following figure is a detailed description of the tables and views outlined in the previous section. The heading descriptions are as follows:

(1) CNAME = column name
(2) TNAME = table or view name
(3) CREATOR = creator of table or view
(4) COLNO = column number
(5) COLTYP = column data type
(6) WIDTH = width of column
(7) SCALE = scale
(8) NULLS = whether or not a column may contain nulls

| CNAME | TNAME | CREATOR | COLNO | COLTYP | WIDTH | SCALE | NULLS |
|---|---|---|---|---|---|---|---|
| APPLID | APPL | FORMS | 1 | CHAR | 10 | | NULL |
| DESCRP | APPL | FORMS | 2 | CHAR | 25 | | NULL |
| TYP | APPL | FORMS | 3 | CHAR | 1 | | NULL |
| HOST | APPL | FORMS | 4 | CHAR | 5 | | NULL |
| WKSTAT | APPL | FORMS | 5 | CHAR | 5 | | NULL |
| COM1 | APPL | FORMS | 6 | CHAR | 80 | | NULL |
| COM2 | APPL | FORMS | 7 | CHAR | 80 | | NULL |
| COM3 | APPL | FORMS | 8 | CHAR | 80 | | NULL |
| COM4 | APPL | FORMS | 9 | CHAR | 80 | | NULL |
| COM5 | APPL | FORMS | 10 | CHAR | 80 | | NULL |
| COM6 | APPL | FORMS | 11 | CHAR | 80 | | NULL |
| COM7 | APPL | FORMS | 12 | CHAR | 80 | | NULL |
| COM8 | APPL | FORMS | 13 | CHAR | 80 | | NULL |
| COM9 | APPL | FORMS | 14 | CHAR | 80 | | NULL |
| COM10 | APPL | FORMS | 15 | CHAR | 80 | | NULL |
| ROLE | ROLAPP | FORMS | 1 | CHAR | 10 | | NULL |
| APPLID | ROLAPP | FORMS | 2 | CHAR | 10 | | NULL |
| USERID | UIUSER | FORMS | 1 | CHAR | 10 | | NULL |
| NAME | UIUSER | FORMS | 2 | CHAR | 30 | | NULL |
| PSWORD | UIUSER | FORMS | 3 | CHAR | 10 | | NULL |
| USERID | USEROL | FORMS | 1 | CHAR | 10 | | NULL |
| ROLE | USEROL | FORMS | 2 | CHAR | 10 | | NULL |
| ROLE | ROLAPT | FORMS | 1 | CHAR | 10 | | NULL |
| APPLID | ROLAPT | FORMS | 2 | CHAR | 10 | | NULL |
| DESCRP | ROLAPT | FORMS | 3 | CHAR | 25 | | NULL |
| TYP | ROLAPT | FORMS | 4 | CHAR | 1 | | NULL |
| USERID | LOGON | FORMS | 1 | CHAR | 10 | | NULL |
| ROLE | LOGON | FORMS | 2 | CHAR | 10 | | NULL |
| PSWORD | LOGON | FORMS | 3 | CHAR | 10 | | NULL |

Figure 3-6 Table and View Description

## 3.8 Object Code Creation

The UIS application routines were compiled with an ANSI COBOL compiler under VAX/VMS. The source is portable to other compilers on machines such as the IBM.

## 3.9 Adaptation Data

The UIS application source is portable to other ANSI COBOL compilers.

## 3.10 Detailed Design Description

### 3.10.1 Main Program List

The following is a list of all "Main Programs" which are modules that are not called by any other module being documented here. These modules are either program entry points or, if they are hooked into another set of programs via subroutine calls, they are the points the external programs can call and therefore enter through. To differentiate between the two types of entry points, look at the individual Module Documentation (section 3.10.8) and look at Module Type for each of the Main Program modules listed. Note whether the routine is a Program, Subroutine, or Function. If it is a Program, it is truly a main program entry point. If not, then it is merely called by other programs not being documented here.

## UI SERVICES Main Program List

| Module Name | Purpose |
|---|---|
| DBCUPR | CHECK USERID-PASSWORD-ROLE COMBINATION |
| DBGAPP | Get APPlications |
| INCGEN/MAIN | MAIN MODULE FOR INCLUDE FILE GENERATOR |
| MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| PROCAP | PROCess APplication |
| PROCDF | PROCess DeFine form |
| PROCPW | PROCESS PSWORD FORM |

### 3.10.2 Module List

The following is a list of all the modules being documented here along with their purpose. Each module has a unique name, no matter what language it was written in.

UI SERVICES Module List

| Module Name | Purpose |
|---|---|
| DBCLSE | CLOSE DATA BASE |
| DBCOM | COMMIT DATA BASE |
| DBCUPR | CHECK USERID-PASSWORD-ROLE COMBINATION |
| DBDAPP | Delete APPlication |
| DBDAPR | Delete APpRol |
| DBGAPD | Get APplication Description |
| DBGAPP | Get APPlications |
| DBIAPD | Insert APplication Description |
| DBOPEN | OPEN DATA BASE |
| DBROLL | ROLL BACK DATA BASE |
| DBUAPD | Update APplication Description |
| DBUPW | UPDATE PASSWORD |
| INCGEN/MAIN | MAIN MODULE FOR INCLUDE FILE GENERATOR |
| MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| MM/NEWFILE | SAVE MESSAGES IN A NEW FILE |
| MM/SAVEIT | SAVE MESAGE FILE CHANGES |
| PROCAP | PROCess APplication |
| PROCDC | PROCess Define Command form |
| PROCDF | PROCess DeFine form |
| PROCPW | PROCESS PSWORD FORM |
| PROCUC | PROCess Update Command form |

### 3.10.3 External Routines List

The following is a list of all routines or functions not documented here that are called by modules that are documented here. The first caller, in alphabetical order, is listed as well. The specification in which any module is documented may be found in the Module Documentation Index (Document Number CM 620100001). See section 3.10.6 for a list of the modules that call each of these external routines.

UI SERVICES External Routines List

| Module Name | First User |
|---|---|
| ADDFRM | PROCDC |
| CLSFRM | PROCDF |
| FCLOSE | MM/NEWFILE |
| FEOF | INCGEN MAIN |
| FOPEN | INCGEN/MAIN |
| FPRINTF | INCGEN MAIN |
| FREAD | INCGEN/MAIN |
| FWRITE | MM SAVEIT |
| GDATA | PROCDC |
| GETCHAR | INCGEN MAIN |
| GETS | INCGEN MAIN |
| GPAGE | PROCDF |
| INITAL | PROCDF |
| INITFP | MM MAIN |
| MEMCMP | MM MAIN |
| MEMCPY | MM MAIN |
| MEMSET | MM NEWFILE |
| OBIND | DBUPW |
| OCOM | DBCOM |
| ODFINN | DBGAPD |
| OEXEC | DBGAPP |
| OFETCH | DBGAPP |
| OISCR | MM MAIN |
| OLOGOF | DBCLSE |
| OLON | DBOPEN |
| OOPEN | DBOPEN |
| OPNFRM | MM MAIN |
| OROL | DBROLL |
| OSQL3 | DBDAPP |
| PDATA | PROCUC |
| PMSGLS | PROCPW |
| PRINTF | INCGEN MAIN |
| RMVPAG | PROCDF |
| SPRINTF | MM NEWFILE |
| TERMFP | PROCDF |
| TRMNAT | PROCPW |

3 10 4 Include File List

The following is a list of all include files called in by modules being documented here Each include file has a unique name regardless of the language being used The purpose of each include file is listed as well A more complete description of each include file is given in section 3 10 9 The purpose listed is the one that is in the source code of the include file

A purpose of "**** PURPOSE NOT FOUND BY STRIPPER ****" indicates that a purpose statement was not written into the include file itself The most common reason for this is that the include file comes from system libraries that were not developed by the project, such as C libraries that are provided with the C compiler

See section 3 10 6 for a set of lists which show all the modules which call in each of these include files

# UI SERVICES Include File List

| File Name | Purpose |
|---|---|
| APPDEF | APPlication DEFinition data declarations |
| CICODE | Command Interpreter CODEs |
| CURSORI | CURSOR description |
| DBNAME | DataBase field NAMEs |
| DEFCOM | DEFCOM data delcarations |
| DEFINE | DEFINE form data declarations |
| FPCODE | FORM PROCESSOR RETURN CODES |
| FPD | FORM PROCESSOR DATA |
| FPEMSG | FORM PROCESSOR ERROR MESSAGES |
| FPPARM | FORM PROCESSOR PARAMETERS |
| LDAI | oracle Logon Data Area description |
| NTM | NTM INTERFACE INCLUDE FILE |
| ORACLE | data delcarations for programs that access ORACLE |
| ORCODE | ORacle CODEs |
| PSWORDI | PaaSWORD form data structure |
| SRVRET | AS THE RETURN GIVEN A TABLE-FULL ERROR |
| STDIO | **** PURPOSE NOT FOUND BY STRIPPER **** |
| STDTYP | STANDARD TYPE DEFINITIONS |
| UPDCOM | UPDate COMmand form data declarations |

### 3 10 5 Where Include File Used List

The following lists each include file from 3 10 4 and all the modules documented in this specification which include them The purpose of each module is listed as well

UI SERVICES Where include file used List

| Include File | Module Name | Module Purpose |
|---|---|---|
| APPDEF | | |
| | DBGAPD | Get APplication Description |
| | DBIAPD | Insert APplication Description |
| | DBUAPD | Update APplication Description |
| | PROCAP | PROCess APplication |
| | PROCDF | PROCess DeFine form |
| | PROCUC | PROCess Update Command form |
| CICODE | | |
| | DBGAPP | Get APPlications |
| | PROCAP | PROCess APplication |
| | PROCDC | PROCess Define Command form |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| | PROCUC | PROCess Update Command form |
| CURSORI | | |
| | DBCUPR | CHECK USERID PASSWORD ROLE COMBINATION |
| | DBDAPP | Delete APPlication |
| | DBDAPR | Delete APpRol |
| | DBGAPD | Get APplication Description |
| | DBGAPP | Get APPlications |
| | DBIAPD | Insert APplication Description |
| | DBOPEN | OPEN DATA BASE |
| | DBUAPD | Update APplication Description |
| | DBUPW | UPDATE PASSWORD |
| | PROCAP | PROCess APplication |
| | PROCDC | PROCess Define Command form |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| | PROCUC | PROCess Update Command form |

UI SERVICES Where-include-file-used List

| Include File | Module Name | Module Purpose |
|---|---|---|
| DBNAME | | |
| | DBOPEN | OPEN DATA BASE |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| DEFCOM | | |
| | PROCDC | PROCess Define Command form |
| DEFINE | | |
| | PROCDF | PROCess DeFine form |
| FPCODE | | |
| | DBCLSE | CLOSE DATA BASE |
| | DBCOM | COMMIT DATA BASE |
| | DBCUPR | CHECK USERID-PASSWORD-ROLE COMBINATION |
| | DBDAPP | Delete APPlication |
| | DBDAPR | Delete APpRol |
| | DBGAPD | Get APplication Description |
| | DBGAPP | Get APPlications |
| | DBIAPD | Insert APplication Description |
| | DBOPEN | OPEN DATA BASE |
| | DBROLL | ROLL BACK DATA BASE |
| | DBUAPD | Update APplication Description |
| | DBUPW | UPDATE PASSWORD |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | MM/NEWFIL | SAVE MESSAGES IN A NEW FILE |
| | MM/SAVEIT | SAVE MESAGE FILE CHANGES |

UI SERVICES Where-include-file-used List

| Include File | Module Name | Module Purpose |
|---|---|---|
| | PROCAP | PROCess APplication |
| | PROCDC | PROCess Define Command form |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| | PROCUC | PROCess Update Command form |
| FPD | | |
| | INCGEN/MA | MAIN MODULE FOR INCLUDE FILE GENERATOR |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | MM/NEWFIL | SAVE MESSAGES IN A NEW FILE |
| | MM/SAVEIT | SAVE MESAGE FILE CHANGES |
| FPEMSG | | |
| | INCGEN/MA | MAIN MODULE FOR INCLUDE FILE GENERATOR |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | MM/NEWFIL | SAVE MESSAGES IN A NEW FILE |
| | MM/SAVEIT | SAVE MESAGE FILE CHANGES |
| FPPARM | | |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | MM/NEWFIL | SAVE MESSAGES IN A NEW FILE |
| | MM/SAVEIT | SAVE MESAGE FILE CHANGES |
| | PROCDC | PROCess Define Command form |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| | PROCUC | PROCess Update Command form |
| LDAI | | |

UI SERVICES Where-include-file-used List

| Include File | Module Name | Module Purpose |
|---|---|---|
| | DBCLSE | CLOSE DATA BASE |
| | DBCOM | COMMIT DATA BASE |
| | DBOPEN | OPEN DATA BASE |
| | DBROLL | ROLL BACK DATA BASE |
| | PROCAP | PROCess APplication |
| | PROCDC | PROCess Define Command form |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| | PROCUC | PROCess Update Command form |
| NTM | | |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | MM/NEWFIL | SAVE MESSAGES IN A NEW FILE |
| | MM/SAVEIT | SAVE MESAGE FILE CHANGES |
| ORACLE | | |
| | DBCUPR | CHECK USERID-PASSWORD-ROLE COMBINATION |
| | DBDAPP | Delete APPlication |
| | DBDAPR | Delete APpRol |
| | DBGAPD | Get APplication Description |
| | DBGAPP | Get APPlications |
| | DBIAPD | Insert APplication Description |
| | DBOPEN | OPEN DATA BASE |
| | DBUAPD | Update APplication Description |
| | DBUPW | UPDATE PASSWORD |
| ORCODE | | |
| | DBCLSE | CLOSE DATA BASE |
| | DBCOM | COMMIT DATA BASE |
| | DBCUPR | CHECK USERID-PASSWORD-ROLE COMBINATION |
| | DBDAPP | Delete APPlication |

UI SERVICES Where-include-file-used List

| Include File | Module Name | Module Purpose |
|---|---|---|
| | DBDAPR | Delete APpRol |
| | DBGAPD | Get APplication Description |
| | DBGAPP | Get APPlications |
| | DBIAPD | Insert APplication Description |
| | DBOPEN | OPEN DATA BASE |
| | DBROLL | ROLL BACK DATA BASE |
| | DBUAPD | Update APplication Description |
| | DBUPW | UPDATE PASSWORD |
| | PROCAP | PROCess APplication |
| | PROCDC | PROCess Define Command form |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| PSWORDI | | |
| | PROCPW | PROCESS PSWORD FORM |
| SRVRET | | |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| STDIO | | |
| | INCGEN/MA | MAIN MODULE FOR INCLUDE FILE GENERATOR |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | MM/NEWFIL | SAVE MESSAGES IN A NEW FILE |
| | MM/SAVEIT | SAVE MESAGE FILE CHANGES |
| STDTYP | | |
| | INCGEN/MA | MAIN MODULE FOR INCLUDE FILE GENERATOR |

UI SERVICES Where-include-file-used List

| Include File | Module Name | Module Purpose |
|---|---|---|
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | MM/NEWFIL | SAVE MESSAGES IN A NEW FILE |
| | MM/SAVEIT | SAVE MESAGE FILE CHANGES |
| UPDCOM | | |
| | PROCUC | PROCess Update Command form |

### 3.10.6 Where External Routine Used List

The following lists each external function or routine listed in 3.10.3 and all the documented modules which call it. The purpose of each module is listed as well.

UI SERVICES Where-external-routine-used List

| System Module | Module Name | Module Purpose |
|---|---|---|
| ADDFRM | | |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | PROCDC | PROCess Define Command form |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| | PROCUC | PROCess Update Command form |
| CLSFRM | | |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| FCLOSE | | |
| | INCGEN/MAIMAIN | MODULE FOR INCLUDE FILE GENERATOR |
| | MM/NEWFILESAVE | MESSAGES IN A NEW FILE |
| | MM/SAVEIT | SAVE MESAGE FILE CHANGES |
| FEOF | | |
| | INCGEN/MAIMAIN | MODULE FOR INCLUDE FILE GENERATOR |
| FOPEN | | |
| | INCGEN/MAIMAIN | MODULE FOR INCLUDE FILE GENERATOR |
| | MM/NEWFILESAVE | MESSAGES IN A NEW FILE |
| | MM/SAVEIT | SAVE MESAGE FILE CHANGES |
| FPRINTF | | |
| | INCGEN/MAIMAIN | MODULE FOR INCLUDE FILE GENERATOR |
| FREAD | | |

UI SERVICES Where-external-routine-used List

| System Module | Module Name | Module Purpose |
|---|---|---|
| | INCGEN/MAIMAIN | MODULE FOR INCLUDE FILE GENERATOR |
| | MM/NEWFILESAVE | MESSAGES IN A NEW FILE |
| FWRITE | | |
| | MM/SAVEIT | SAVE MESAGE FILE CHANGES |
| GDATA | | |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | PROCDC | PROCess Define Command form |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| | PROCUC | PROCess Update Command form |
| GETCHAR | | |
| | INCGEN/MAIMAIN | MODULE FOR INCLUDE FILE GENERATOR |
| GETS | | |
| | INCGEN/MAIMAIN | MODULE FOR INCLUDE FILE GENERATOR |
| GPAGE | | |
| | PROCDF | PROCess DeFine form |
| INITAL | | |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |

UI SERVICES Where-external-routine-used List

| System Module | Module Name | Module Purpose |
|---|---|---|
| INITFP | | |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| MEMCMP | | |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | MM/SAVEIT | SAVE MESAGE FILE CHANGES |
| MEMCPY | | |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | MM/NEWFILE | SAVE MESSAGES IN A NEW FILE |
| MEMSET | | |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | MM/NEWFILE | SAVE MESSAGES IN A NEW FILE |
| OBIND | | |
| | DBCUPR | CHECK USERID-PASSWORD-ROLE COMBINATION |
| | DBDAPP | Delete APPlication |
| | DBDAPR | Delete APpRol |
| | DBGAPD | Get APplication Description |
| | DBGAPP | Get APPlications |
| | DBIAPD | Insert APplication Description |
| | DBUAPD | Update APplication Description |
| | DBUPW | UPDATE PASSWORD |

UI SERVICES Where-external-routine-used List

| System Module | Module Name | Module Purpose |
|---|---|---|
| OCOM | | |
| | DBCOM | COMMIT DATA BASE |
| ODFINN | | |
| | DBCUPR | CHECK USERID-PASSWORD-ROLE COMBINATION |
| | DBGAPD | Get APplication Description |
| | DBGAPP | Get APPlications |
| OEXEC | | |
| | DBCUPR | CHECK USERID-PASSWORD-ROLE COMBINATION |
| | DBDAPP | Delete APPlication |
| | DBDAPR | Delete APpRol |
| | DBGAPD | Get APplication Description |
| | DBGAPP | Get APPlications |
| | DBIAPD | Insert APplication Description |
| | DBUAPD | Update APplication Description |
| | DBUPW | UPDATE PASSWORD |
| OFETCH | | |
| | DBCUPR | CHECK USERID-PASSWORD-ROLE COMBINATION |
| | DBGAPD | Get APplication Description |
| | DBGAPP | Get APPlications |
| OISCR | | |
| | MM MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| OLOGOF | | |
| | DBCLSE | CLOSE DATA BASE |

UI SERVICES Where-external-routine-used List

| System Module | Module Name | Module Purpose |
|---|---|---|
| OLON | | |
| | DBOPEN | OPEN DATA BASE |
| OOPEN | | |
| | DBOPEN | OPEN DATA BASE |
| OPNFRM | | |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| OROL | | |
| | DBROLL | ROLL BACK DATA BASE |
| OSQL3 | | |
| | DBCUPR | CHECK USERID-PASSWORD-ROLE COMBINATION |
| | DBDAPP | Delete APPlication |
| | DBDAPR | Delete APpRol |
| | DBGAPD | Get APplication Description |
| | DBGAPP | Get APPlications |
| | DBIAPD | Insert APplication Description |
| | DBUAPD | Update APplication Description |
| | DBUPW | UPDATE PASSWORD |
| PDATA | | |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | MM/NEWFILE | SAVE MESSAGES IN A NEW FILE |

UI SERVICES Where-external-routine-used List

| System Module | Module Name | Module Purpose |
|---|---|---|
| | PROCDC | PROCess Define Command form |
| | PROCDF | PROCess DeFine form |
| | PROCUC | PROCess Update Command form |
| PMSGLS | | |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | PROCDC | PROCess Define Command form |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| | PROCUC | PROCess Update Command form |
| PRINTF | | |
| | INCGEN/MAIMAIN | MODULE FOR INCLUDE FILE GENERATOR |
| RMVPAG | | |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| SPRINTF | | |
| | MM/NEWFILESAVE | MESSAGES IN A NEW FILE |
| TERMFP | | |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |
| TRMNAT | | |
| | MM/MAIN | MAIN MODULE FOR MESSAGE MANAGEMENT |

## UI SERVICES Where-external-routine-used List

| System Module | Module Name | Module Purpose |
|---|---|---|
| | PROCDF | PROCess DeFine form |
| | PROCPW | PROCESS PSWORD FORM |

3 10 7 Main Program Parts List

The following lists each Main Program listed in 3.10.1 and all the modules which are called either by that module itself or by any of the documented modules which it calls. It is possible for a non-main module to be listed more that once if it is called by multiple modules. The called modules, in this case known as program parts, are marked as to whether they are documented here. If so, the phrase "well-defined module" appears by the module name, if not it is an "external routine" The Purpose of the Main Program module is listed as well

UI SERVICES Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| DBCUPR | Purpose--› | CHECK USERID-PASSWORD-ROLE COMBINATION |
| | OBIND | External routine |
| | ODFINN | External routine |
| | OEXEC | External routine |
| | OFETCH | External routine |
| | OSQL3 | External routine |

UI SERVICES Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| DBGAPP | Purpose--> | Get APPlications |
| | OBIND | External routine |
| | ODFINN | External routine |
| | OEXEC | External routine |
| | OFETCH | External routine |
| | OSQL3 | External routine |

UI SERVICES Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| INCGEN/MAIN | Purpose--> | MAIN MODULE FOR INCLUDE FILE GENERATOR |
| | FCLOSE | External routine |
| | FEOF | External routine |
| | FOPEN | External routine |
| | FPRINTF | External routine |
| | FREAD | External routine |
| | GETCHAR | External routine |
| | GETS | External routine |
| | PRINTF | External routine |

UI SERVICES Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| MM/MAIN | Purpose--› | MAIN MODULE FOR MESSAGE MANAGEMENT |
| | ADDFRM | External routine |
| | FCLOSE | External routine |
| | FOPEN | External routine |
| | FREAD | External routine |
| | FWRITE | External routine |
| | GDATA | External routine |
| | INITAL | External routine |
| | INITFP | External routine |
| | MEMCMP | External routine |
| | MEMCPY | External routine |
| | MEMSET | External routine |
| | MM/NEWFILE | Well-defined module |
| | MM/SAVEIT | Well-defined module |
| | OISCR | External routine |
| | OPNFRM | External routine |
| | PDATA | External routine |
| | PMSGLS | External routine |
| | SPRINTF | External routine |
| | TERMFP | External routine |
| | TRMNAT | External routine |

UI SERVICES Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| PROCAP | Purpose--› | PROCess APplication |
| | DBCOM | Well-defined module |
| | DBGAPD | Well-defined module |
| | OBIND | External routine |
| | OCOM | External routine |
| | ODFINN | External routine |
| | OEXEC | External routine |
| | OFETCH | External routine |
| | OSQL3 | External routine |

UI SERVICES Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| PROCDF | Purpose--› | PROCess DeFine form |
| | ADDFRM | External routine |
| | CLSFRM | External routine |
| | DBCLSE | Well-defined module |
| | DBCOM | Well-defined module |
| | DBDAPP | Well-defined module |
| | DBDAPR | Well-defined module |
| | DBGAPD | Well-defined module |
| | DBIAPD | Well-defined module |
| | DBOPEN | Well-defined module |
| | DBROLL | Well-defined module |
| | DBUAPD | Well-defined module |
| | GDATA | External routine |
| | GPAGE | External routine |
| | INITAL | External routine |
| | INITFP | External routine |
| | OBIND | External routine |
| | OCOM | External routine |
| | ODFINN | External routine |
| | OEXEC | External routine |
| | OFETCH | External routine |
| | OISCR | External routine |
| | OLOGOF | External routine |
| | OLON | External routine |
| | OOPEN | External routine |
| | OPNFRM | External routine |
| | OROL | External routine |
| | OSQL3 | External routine |
| | PDATA | External routine |
| | PMSGLS | External routine |
| | PROCDC | Well-defined module |
| | PROCUC | Well-defined module |
| | RMVPAG | External routine |
| | TERMFP | External routine |
| | TRMNAT | External routine |

UI SERVICES Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| PROCPW | Purpose--› | PROCESS PSWORD FORM |
| | ADDFRM | External routine |
| | CLSFRM | External routine |
| | DBCLSE | Well-defined module |
| | DBCOM | Well-defined module |
| | DBOPEN | Well-defined module |
| | DBUPW | Well-defined module |
| | GDATA | External routine |
| | INITAL | External routine |
| | INITFP | External routine |
| | OBIND | External routine |
| | OCOM | External routine |
| | OEXEC | External routine |
| | OISCR | External routine |
| | OLOGOF | External routine |
| | OLON | External routine |
| | OOPEN | External routine |
| | OPNFRM | External routine |
| | OSQL3 | External routine |
| | PMSGLS | External routine |
| | RMVPAG | External routine |
| | TERMFP | External routine |
| | TRMNAT | External routine |

### 3.10.8 Module Documentation

The following documentation describes information which is specific to each individual module being documented in this specification as listed in section 3.10.2. It provides a compact way of getting information that would be otherwise buried within each module's source code.

The specific items in this module documentation have the following meanings:

| | |
|---|---|
| NAME: | Name of program Module. |
| PURPOSE: | Purpose of Module as detailed in the source code. |
| LANGUAGE: | Programming language source code is written in. The choices are: VAX-11 FORTRAN, C (I/S-1 Workbench 'C'), VAX-11 COBOL |
| MODULE TYPE: | Whether a Program, Subroutine, or Function. |
| SOURCE FILE: | Name of Source File from file specification. |
| SOURCE FILE TYPE: | Source File Extension from file specification. |
| HOST: | Whether this is a host-dependent routine (VAX or IBM) or blank if host-independent. |
| SUBSYSTEM: | IISS sub-system this file resides in. |
| SUBDIRECTORY: | Sub directory of that subsystem in which this file resides. |
| DOCUMENTATION GROUP: | Name of documentation group of which this source file is a member. |
| DESCRIPTION | A description of the module as otained |

from the source code.

| | |
|---|---|
| ARGUMENTS: | The arguments with which this routine is called if it is a Subroutine or a Function. |
| INCLUDE FILES: | A list of all the files that are included into this module as well as their purposes. |
| ROUTINES CALLED: | Subroutines or Functions, either documented or external, called by this module, if any. |
| CALLED DIRECTLY BY: | The documented routines which call this module, if any. |
| USED IN MAIN PROGRAM(S): | The documented Main Programs which contain this module in their parts list according to the list in section 3.10.7. |

The Module Documentation is arranged alphabetically according to Module Name.

PS 620144100
1 November 1985

UI SERVICES Module Documentation

| | |
|---|---|
| NAME | DBCLSE |
| PURPOSE | CLOSE DATA BASE |
| LANGUAGE | VAX-11 COBOL |
| MODULE TYPE | SUBROUTINE |
| SOURCE FILE | DBCLSE |
| SOURCE FILE TYPE | .COB |
| HOST | |
| SUBSYSTEM | UI |
| SUBDIRECTORY | UIS |
| DOCUMENTATION GROUP | UISERV |

DESCRIPTION

THIS MODULE CLOSES THE ORACLE DATA BASE.

ARGUMENTS

LDA = RECRD
RCODE = DSPLY [X(5)]

INCLUDE FILES

RCODE - ORACLE CODES
FRCODE - FORM PROCESSOR RETURN CODES
LDA - Oracle Logon Data Area description.

ROUTINE CALLED

CBL...

PROCDF - PROCess DeFine form
PROCPW - PROCESS PSWORD FORM

# UI SERVICES Module Documentation

NAME: DBCOM
PURPOSE: COMMIT DATA BASE
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DBCOM
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: UIS
DOCUMENTATION GROUP: UISERV

DESCRIPTION:

THIS MODULE COMMITS UPDATES TO THE ORACLE DATA BASE.

ARGUMENTS:

LDA = RECRD
RCODE = DSPLY [X(5)]

INCLUDE FILES:

ORACLE - ORACLE CODE
FPCODE - FORM PROCESSOR RETURN CODES
LDAI - Oracle Logon Data Area description

ROUTINES CALLED:

COBOL

USED IN MAIN PROGRAM(S):

| | |
|---|---|
| PROCAP | - PROCess APplication |
| PROCDF | - PROCess DeFine form |
| PROCPW | - PROCESS PSWORD FORM |

UI SERVICES Module Documentation

NAME: DBCUPR
PURPOSE: CHECK USERID-PASSWORD-ROLE COMBINATION
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DBCUPR
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: UIS
DOCUMENTATION GROUP: UISERV

DESCRIPTION:
---

THIS MODULE CHECKS A USERID, PASSWORD, AND
ROLE TO SEE IF THEY FORM A VALID COMBINATION.

ARGUMENTS:
---
CURSOR = RECRD
USERID = DSPLY [X(10)]
PSWORD = DSPLY [X(10)]
ROLE = DSPLY [X(10)]
RCODE = DSPLY [X(5)]

INCLUDE FILES
---

ORACLE - data delcarations for programs that access ORACLE
ORCODE - ORacle CODEs
FPCODE - FORM PROCESSOR RETURN CODES
CURSOR - CURSOR description

ROUTINES CALLED

OSQL
OPEN
DECL
DEFINE
OFETCH

UI SERVICES Module Documentation

NAME: DBDAPP
PURPOSE: Delete APPlication
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DBDAPP
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: UIS
DOCUMENTATION GROUP: UISERV

DESCRIPTION:
---
THIS MODULE DELETES AN APPLICATION.

ARGUMENTS:
---
CURSOR = RECRD
APPLICATION-ID = DSPLY [X(10)]
RCODE = DSPLY [X(5)]

INCLUDE FILES:
---
ORACLE - data delcarations for programs that access ORACLE
ORCODE - ORacle CODEs
FPCODE - FORM PROCESSOR RETURN CODES
CURSORI - CURSOR description

ROUTINES CALLED:
---
OSQL3
OBIND
OEXEC

CALLED DIRECTLY BY:
---
PROCUC - PROCess Update Command form

USED IN MAIN PROGRAM(S):

PROCDF - PROCess DeFine form

UI SERVICES Module Documentation

NAME: DBDAPR
PURPOSE: Delete APpRol
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DBDAPR
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: UIS
DOCUMENTATION GROUP: UISERV

DESCRIPTION:

THIS MODULE DELETES ENTRIES IN THE ROLAPP TABLE FOR A SPECIFIC APPLICATION. IT IS USED WHEN AN APPLICATION IS DELETED.

ARGUMENTS:

CURSOR = RECRD
APPLICATION-ID = DSPLY [X(10)]
RCODE = DSPLY [X(5)]

INCLUDE FILES:

ORACLE - data delcarations for programs that access ORACLE
ORCODE - ORacle CODEs
FPCODE - FORM PROCESSOR RETURN CODES
CURSORI - CURSOR description

ROUTINES CALLED:

OSQL3
OBIND
OEXEC

CALLED DIRECTLY BY:

PROCUC PROCess Update Command form

USED IN MAIN PROGRAM(S):

PROCDF - PROCess DeFine form

UI SERVICES Module Documentation

NAME: DBGAPD
PURPOSE: Get APplication Description
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DBGAPD
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: UIS
DOCUMENTATION GROUP: UISERV

DESCRIPTION:
---

THIS MODULE GETS THE DESCRIPTION OF AN APPLICATION.

ETCHED (OK)

ARGUMENTS:
---

CURSOR = RECRD
APPLICATION-ID = DSPLY [X(10)]
APPLICATION-DEFINITION = RECRD
RCODE = DSPLY [X(5)]

INCLUDE FILES:
---

| | |
|---|---|
| ORACLE | - data delcarations for programs that access ORACLE |
| ORCODE | - ORacle CODEs |
| FPCODE | - FORM PROCESSOR RETURN CODES |
| CURSORI | - CURSOR description |
| APPDEF | - APPlication DEFinition data declarations |

ROUTINES CALLED:
---

OSQL3
OBIND
OEXEC
ODFINN

OFETCH

CALLED DIRECTLY BY:

| | |
|---|---|
| PROCAP | - PROCess APplication |
| PROCDF | - PROCess DeFine form |

USED IN MAIN PROGRAM(S):

| | |
|---|---|
| PROCAP | - PROCess APplication |
| PROCDF | - PROCess DeFine form |

UI SERVICES Module Documentation

NAME: DBGAPP
PURPOSE: Get APPlications
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DBGAPP
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: UIS
DOCUMENTATION GROUP: UISERV

DESCRIPTION:
---
THIS MODULE GETS THE NAMES OF THE
APPLICATIONS THAT ARE VALID FOR A
PARTICULAR ROLE.

ARGUMENTS:
---
CURSOR = RECRD
CONTINUATION-IND = DSPLY [X]
[illegible]E = DSPLY [X(10)]
[illegible]PLICATION = RECRD
RCODE = DSPLY [X(5)]

INCLUDE FILES:
---
CICODE - Command Interpreter CODEs
ORACLE - data delcarations for programs that access ORACLE
ORCODE - ORacle CODEs
FPCODE - FORM PROCESSOR RETURN CODES
CURSORI - CURSOR description

ROUTINES CALLED:
---
OSQL3
OBIND
OEXEC
ODFINN

OFETCH

UI SERVICES Module Documentation

NAME: DBIAPD
PURPOSE: Insert APplication Description
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DBIAPD
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: UIS
DOCUMENTATION GROUP: UISERV

DESCRIPTION:

THIS MODULE INSERTS AN APPLICATION DESCRIPTION.

ARGUMENTS:

CURSOR = RECRD
APPLICATION-ID = DSPLY [X(10)]
APPLICATION-DEFINITION = RECRD
RCODE = DSPLY [X(5)]

INCLUDE FILES:

ORACLE - data delcarations for programs that access ORACLE
ORCODE - ORacle CODEs
FPCODE - FORM PROCESSOR RETURN CODES
CURSORI - CURSOR description
APPDEF - APPlication DEFinition data declarations

ROUTINES CALLED:

OSQL3
OBIND
OEXEC

CALLED DIRECTLY BY

PROCDC - PROCess Define Command form

USED IN MAIN PROGRAM(S)

PROCDF - PROCess DeFine form

UI SERVICES Module Documentation

| | |
|---|---|
| NAME | DBOPEN |
| PURPOSE | OPEN DATA BASE |
| LANGUAGE | VAX-11 COBOL |
| MODULE TYPE | SUBROUTINE |
| SOURCE FILE | DBOPEN |
| SOURCE FILE TYPE | COB |
| HOST | |
| SUBSYSTEM | UI |
| SUBDIRECTORY | UIS |
| DOCUMENTATION GROUP | UISERV |

DESCRIPTION

THIS MODULE OPENS AN ORACLE DATA BASE

ARGUMENTS

DATABASE NAME - DSPLY [X(15)]
NAME LENGTH - DSPLY [S9999]
LDA - RECRI
CURSOR - RECRI
RCODE - DSPLY [X(5)]

INCLUDE FILES

| | |
|---|---|
| ORACLE | data declarations for programs that access ORACLE |
| ORCODE | ORACLE CODES |
| FRCODE | FORM PROCESSOR RETURN CODES |
| IBNAME | DataBase field NAMES |
| LDAI | Oracle Logon Data Area description |
| CURSORI | CURSOR description |

ROUTINES CALLED

OLON
OOPEN

CALLED DIRECTLY BY

| | |
|---|---|
| PROCDF | - PROCess DeFine form |
| PROCPW | - PROCESS PSWORD FORM |

USED IN MAIN PROGRAM(S)

| | |
|---|---|
| PROCDF | - PROCess DeFine form |
| PROCPW | - PROCESS PSWORD FORM |

UI SERVICES Module Documentation

| | |
|---|---|
| NAME | DBROLL |
| PURPOSE | ROLL BACK DATA BASE |
| LANGUAGE | VAX-11 COBOL |
| MODULE TYPE | SUBROUTINE |
| SOURCE FILE | DBROLL |
| SOURCE FILE TYPE | .COB |
| HOST | |
| SUBSYSTEM | UI |
| SUBDIRECTORY | UIS |
| DOCUMENTATION GROUP | UISERV |

DESCRIPTION

THIS MODULE ROLLS BACK THE CURRENT ORACLE
DATA BASE TRANSACTION.

ARGUMENTS

LDA = RECRD
RCODE = DSPLY [X(5)]

INCLUDE FILES

| | |
|---|---|
| ORCODE | - ORacle CODEs |
| FPCODE | - FORM PROCESSOR RETURN CODES |
| LDAI | - oracle Logon Data Area description |

ROUTINES CALLED

OROL

CALLED DIRECTLY BY

| | |
|---|---|
| PROCUC | - PROCess Update Command form |

USED IN MAIN PROGRAM(S)

PROCDF PROCess DeFine form

UI SERVICES Module Documentation

| | |
|---|---|
| NAME | DBUAPD |
| PURPOSE | Update APplication Description |
| LANGUAGE | VAX-11 COBOL |
| MODULE TYPE | SUBROUTINE |
| SOURCE FILE | DBUAPD |
| SOURCE FILE TYPE | COB |
| HOST | |
| SUBSYSTEM | UI |
| SUBDIRECTORY | UIS |
| DOCUMENTATION GROUP | UISERV |

DESCRIPTION

THIS MODULE UPDATES THE DESCRIPTION OF
AN APPLICATION

PDATEL (OK

ARGUMENTS

CURSOR - RECRI
APPLICATION II - DSPLY [X(10)]
APPLICATION DEFINITION - RECRD
RCODE - DSPLY [X(5)]

INCLUDE FILES

| | |
|---|---|
| ORACLE | data declaration: for programs that access ORACLE |
| ORCODE | ORacle CODE: |
| FRCODE | FORM PROCESSOR RETURN CODES |
| CURSOR | CURSOR description |
| APPLEF | APPLication DEFinition data declaration: |

ROUTINE CALLED

(BEGIN
(BEGIN
(EXEC

CALLED DIRECTLY BY:

PROCUC - PROCess Update Command form

USED IN MAIN PROGRAM(S):

PROCDF - PROCess DeFine form

UI SERVICES Module Documentation

NAME: DBUPW
PURPOSE: UPDATE PASSWORD
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DBUPW
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: UIS
DOCUMENTATION GROUP: UISERV

DESCRIPTION:

THIS MODULE CHANGES THE PASSWORD FOR A PARTICULAR USER ID. THE OLD PASSWORD - USER ID COMBINATION MUST BE CORRECT BEFORE A CHANGE IS MADE.

ARGUMENTS:

CURSOR = RECRD
USERID = DSPLY [X(10)]
OLDPSWORD = DSPLY [X(10)]
NEWPSWORD = DSPLY [X(10)]
RCODE = DSPLY [X(5)]

INCLUDE FILES:

ORACLE - data delcarations for programs that access ORACLE
ORCODE - ORacle CODEs
FPCODE - FORM PROCESSOR RETURN CODES
CURSORI - CURSOR description

ROUTINES CALLED:

OSQL
OBIND
OEXEC

CALLED DIRECTLY BY:

PROCPW - PROCESS PSWORD FORM

USED IN MAIN PROGRAM(S):

PROCPW - PROCESS PSWORD FORM

UI SERVICES Module Documentation

NAME: INCGEN/MAIN
PURPOSE: MAIN MODULE FOR INCLUDE FILE GENERATOR
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: INT ()
SOURCE FILE: INCGEN
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: MM
DOCUMENTATION GROUP: UISERV

DESCRIPTION:
---

SYNOPSIS
VOID MAIN()

DESCRIPTION
GENERATES AN INCLUDE FILE FROM MESSAGE FILE(S)

INCLUDE FILES:
---
STDTYP - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FPEMSG - FORM PROCESSOR ERROR MESSAGES

ROUTINES CALLED:
---
PRINTF
GETS
FOPEN
FEOF
FREAD
FPRINTF
FCLOSE
GETCHAR

UI SERVICES Module Documentation

NAME: MM/MAIN
PURPOSE: MAIN MODULE FOR MESSAGE MANAGEMENT
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: INT ()
SOURCE FILE: MM
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: MM
DOCUMENTATION GROUP: UISERV

DESCRIPTION:

SYNOPSIS
MAIN()

DESCRIPTION
UTILITY TO MAINTAIN MESSAGE FILES USED BY FORM PROCESSOR

INCLUDE FILES:

| | |
|---|---|
| STDTYP | - STANDARD TYPE DEFINITIONS |
| STDIO | - **** PURPOSE NOT FOUND BY STRIPPER **** |
| FPPARM | - FORM PROCESSOR PARAMETERS |
| FPI | - FORM PROCESSOR DATA |
| FPCODE | - FORM PROCESSOR RETURN CODES |
| FPEMSG | - FORM PROCESSOR ERROR MESSAGES |
| NTM | - NTM INTERFACE INCLUDE FILE |

ROUTINES CALLED:

INITAL
MEMCMP
TERMPT
[illegible]
[illegible]
MM_NEWFILE SAVE MESSAGES IN A NEW FILE
[illegible]
[illegible] SAVE MESAGE FILE CHANGES

GDATA
MEMSET
OISCR
ADDFRM
TRMNAT
INITFP
OPNFRM

UI SERVICES Module Documentation

NAME: MM/NEWFILE
PURPOSE: SAVE MESSAGES IN A NEW FILE
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ( )
SOURCE FILE: MM
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: MM
DOCUMENTATION GROUP: UISERV

DESCRIPTION:
---

ARGUMENTS:
---
FILEDESC = CHAR []
BASE = CHAR []

INCLUDE FILES:
---
STDTYP - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
FPPARM - FORM PROCESSOR PARAMETERS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FPEMSG - FORM PROCESSOR ERROR MESSAGES
NTM - NTM INTERFACE INCLUDE FILE

ROUTINES CALLED:
---
PDATA
MEMCPY
FCLOSE
FREAD
FOPEN
SPRINTF
MEMSET

CALLED DIRECTLY BY:

MM/MAIN - MAIN MODULE FOR MESSAGE MANAGEMENT

USED IN MAIN PROGRAM(S):

MM/MAIN - MAIN MODULE FOR MESSAGE MANAGEMENT

UI SERVICES Module Documentation

NAME: MM/SAVEIT
PURPOSE: SAVE MESAGE FILE CHANGES
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: BOOL ( )
SOURCE FILE: MM
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: MM
DOCUMENTATION GROUP: UISERV

DESCR PTION:
---

ARGUMENTS:
---
FILEDESC = CHAR []

INCLUDE FILES:
---
STDTYP - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
FPPARM - FORM PROCESSOR PARAMETERS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FPEMSG - FORM PROCESSOR ERROR MESSAGES
NTM - NTM INTERFACE INCLUDE FILE

ROUTINES CALLED:
---
FCLOSE
FWRITE
MEMCMP
FOPEN

CALLED DIRECTLY BY:
---
MM MAIN - MAIN MODULE FOR MESSAGE MANAGEMENT

USED IN MAIN PROGRAM(S):

MM/MAIN - MAIN MODULE FOR MESSAGE MANAGEMENT

UI SERVICES Module Documentation

NAME PROCAP
PURPOSE PROCess APplication
LANGUAGE VAX-11 COBOL
MODULE TYPE SUBROUTINE
SOURCE FILE PROCAP
SOURCE FILE TYPE .COB
HOST:
SUBSYSTEM UI
SUBDIRECTORY UIS
DOCUMENTATION GROUP UISERV

DESCRIPTION:

THIS MODULE PROCESSES A REQUEST TO RUN
A REMOTE APPLICATION.

ARGUMENTS:

```
LDA = RECRD
CURSOR = RECRD
FUNCTION = DSPLY [X(10)]
ACTION-CODE = DSPLY [X(5)]
MSG-HEADER = DSPLY [X(800)]
RCODE = DSPLY [X(5)]
```

INCLUDE FILES:

```
CICODE      Command Interpreter CODEs
ORCODE    - ORacle CODEs
FPCODE    - FORM PROCESSOR RETURN CODES
APPDEF    - APPlication DEFinition data declarations
LDAI      - oracle Logon Data Area description
CURSORI   - CURSOR description
```

ROUTINES CALLED:

```
DBGAPI      Get APplication Description
DBCOM       COMMIT DATA BASE
```

UI SERVICES Module Documentation

NAME: PROCDC
PURPOSE: PROCess Define Command form
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: PROCDC
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: UIS
DOCUMENTATION GROUP: UISERV

DESCRIPTION:

THIS MODULE PROCESSES THE DEFCOM FORM OF
THE UIMS SYSTEM SERVICES.

ARGUMENTS:

LDA = RECRD
CURSOR = RECRD
ACTION-CODE = DSPLY [X(5)]
APPLICATION-ID = DSPLY [X(10)]
RCODE = DSPLY [X(5)]

INCLUDE FILES:

| | |
|---|---|
| CICODE | - Command Interpreter CODEs |
| DEFCOM | - DEFCOM data delcarations |
| FPPARM | - FORM PROCESSOR PARAMETERS |
| ORCODE | - ORacle CODEs |
| FPCODE | - FORM PROCESSOR RETURN CODES |
| LDAI | - oracle Logon Data Area description |
| CURSORI | - CURSOR description |

ROUTINES CALLED:

ADDFRM
PDATA
GDATA
DBIAPD - Insert APplication Description

DBCOM - COMMIT DATA BASE
PMSGLS

CALLED DIRECTLY BY:

PROCDF - PROCess DeFine form

USED IN MAIN PROGRAM(S):

PROCDF - PROCess DeFine form

UI SERVICES Module Documentation

NAME: PROCDF
PURPOSE: PROCess DeFine form
LANGUAGE: VAX-11 COBOL
MODULE TYPE: PROGRAM
SOURCE FILE: PROCDF
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: UIS
DOCUMENTATION GROUP: UISERV

DESCRIPTION:

THIS MODULE PROCESSES THE DEFINE FORM OF
THE UI SERVICES.

INCLUDE FILES:

| | |
|---|---|
| APPDEF | - APPlication DEFinition data declarations |
| CICODE | - Command Interpreter CODEs |
| DEFINE | - DEFINE form data declarations |
| FPCODE | - FORM PROCESSOR RETURN CODES |
| FPPARM | - FORM PROCESSOR PARAMETERS |
| DBNAME | - DataBase field NAMEs |
| ORCODE | - ORacle CODEs |
| LDAI | - oracle Logon Data Area description |
| CURSORI | - CURSOR description |
| SRVRET | - AS THE RETURN GIVEN A TABLE-FULL ERROR |

ROUTINES CALLED

| | |
|---|---|
| INITAL | |
| INITFP | |
| TERMFP | |
| TRMNAT | |
| DBOPEN | - OPEN DATA BASE |
| OPNFRM | |
| ADDFRM | |
| PDATA | |
| OISCR | |

PMSGLS
GDATA
DBGAPD - Get APplication Description
PROCDC - PROCess Define Command form
PROCUC - PROCess Update Command form
GPAGE
RMVPAG
CLSFRM
DBCLSE - CLOSE DATA BASE

# UI SERVICES Module Documentation

NAME: PROCPW
PURPOSE: PROCESS PSWORD FORM
LANGUAGE: VAX-11 COBOL
MODULE TYPE: PROGRAM
SOURCE FILE: PROCPW
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: UIS
DOCUMENTATION GROUP: UISERV

DESCRIPTION:

THIS MODULE PROCESSES THE PSWORD FORM OF THE UI SERVICES.

INCLUDE FILES:

| | |
|---|---|
| CICODE | - Command Interpreter CODEs |
| FPPARM | - FORM PROCESSOR PARAMETERS |
| DBNAME | - DataBase field NAMEs |
| ORCODE | - ORacle CODEs |
| PSWORDI | - PaaSWORD form data structure |
| FPCODE | - FORM PROCESSOR RETURN CODES |
| LDAI | - oracle Logon Data Area description |
| CURSORI | - CURSOR description |
| SRVRET | - AS THE RETURN GIVEN A TABLE-FULL ERROR |

ROUTINES CALLED:

| | |
|---|---|
| INITAL | |
| INITFP | |
| TERMFP | |
| TRMNAT | |
| DBOPEN | - OPEN DATA BASE |
| OPNFRM | |
| ALDFRM | |
| QISCF | |
| GDATA | |
| PMSGLS | |

DBUPW - UPDATE PASSWORD
DBCOM - COMMIT DATA BASE
RMVPAG
CLSFRM
DBCLSE - CLOSE DATA BASE

# UI SERVICES Module Documentation

NAME: PROCUC
PURPOSE: PROCess Update Command form
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: PROCUC
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: UIS
DOCUMENTATION GROUP: UISERV

## DESCRIPTION:

THIS MODULE PROCESSES THE UPDCOM FORM OF
THE DEFINE APPLICATION SERVICE.

## ARGUMENTS:

LDA = RECRD
CURSOR = RECRD
ACTION-CODE = DSPLY [X(5)]
APPLICATION-ID = DSPLY [X(10)]
APPLICATION-DEFINITION = RECRD
RCODE = DSPLY [X(5)]

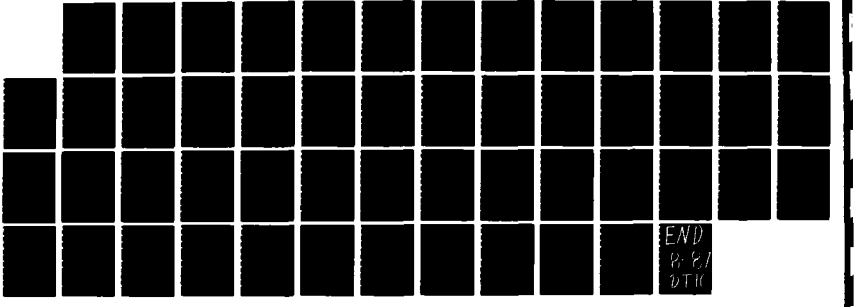
## INCLUDE FILES:

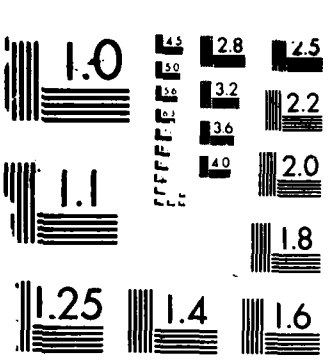
| | |
|---|---|
| CICODE | - Command Interpreter CODEs |
| UPDCOM | - UPDate COMmand form data declarations |
| FPPARM | - FORM PROCESSOR PARAMETERS |
| FPCODE | - FORM PROCESSOR RETURN CODES |
| LDAI | - oracle Logon Data Area description |
| CURSORI | - CURSOR description |
| APPDEF | - APPlication DEFinition data declarations |

## ROUTINES CALLED:

ADDFRM
PDATA
GDATA

AD-A182 538 INTEGRATED INFORMATION SUPPORT SYSTEM (IISS) VOLUME 8 2/2
USER INTERFACE SUBS (U) GENERAL ELECTRIC CO
SCHENECTADY NY PRODUCTION RESOURCESCONSU
UNCLASSIFIED C MORENC ET AL 01 NOV 85 PS-620144108 F/G 12/5 NL





PMSGLS
DBCOM - COMMIT DATA BASE
DBDAPP - Delete APPlication
DBDAPR - Delete APpRol
DBROLL - ROLL BACK DATA BASE
DBUAPD - Update APplication Description

CALLED DIRECTLY BY:
---
PROCDF - PROCess DeFine form

USED IN MAIN PROGRAM(S):
---
PROCDF - PROCess DeFine form

### 3.10.9 Include File Descriptions

The following list contains a purpose and description of each include file listed in 3.10.4 as specified in the source code. The language it is written in is also given.

UI SERVICES Include File Description

FILE NAME: APPDEF
PURPOSE: APPlication DEFinition data declarations
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

IDENTIFICATION: APPDEF

UI SERVICES Include File Description

FILE NAME: CICODE
PURPOSE: Command Interpreter CODEs
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

IDENTIFICATION: CICODE

DESCRIPTION:
THESE ARE COMMAND INTERPRETER CODES.
INFORMATION:
TYPE: (C-COBOL, IC-COBOL COPY) IC
SUBSYSTEM: UI-CI
CONFIGURATION ITEM ID:

DESIGNED BY: S. L. BARKER
START DATE: 1/18/83
FINISH DATE: 1/18/83

PROGRAMMED BY: S. L. BARKER
START DATE: 1/18/83
FINISH DATE: 1/18/83

UPDATED 8/24/83 TO COMBINE WITH UICODE.INC
UPDATED 8/25/83 TO ACCOMMODATE NEW MESSAGE LINE CODE

UI SERVICES Include File Description

FILE NAME: CURSORI
PURPOSE: CURSOR description
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

IDENTIFICATION: CURSOR

DESCRIPTION:
THIS IS THE ORACLE CURSOR DESCRIPTION.
INFORMATION:
TYPE: (C-COBOL, IC-COBOL COPY) IC
SUBSYSTEM: UI
CONFIGURATION ITEM ID:

DESIGNED BY: S. L. BARKER
START DATE: 1/24/83
FINISH DATE: 1/24/83

PROGRAMMED BY: S. L. BARKER
START DATE: 1/24/83
FINISH DATE: 1/24/83

UI SERVICES Include File Description

FILE NAME: DBNAME
PURPOSE: DataBase field NAMEs
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

IDENTIFICATION: DBNAME

DESCRIPTION:
THIS DESCRIBES THE ORACLE DATABASE ID FIELDS.
INFORMATION:
TYPE: (C-COBOL, IC-COBOL COPY) IC
SUBSYSTEM: UI
CONFIGURATION ITEM ID:

DESIGNED BY: S. L. BARKER
START DATE: 1/17/83
FINISH DATE: 1/17/83

PROGRAMMED BY: S. L. BARKER
START DATE: 1/17/83
FINISH DATE: 1/24/83

UI SERVICES Include File Description

FILE NAME: DEFCOM
PURPOSE: DEFCOM data delcarations
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

IDENTIFICATION: DEFCOM

DESCRIPTION: THESE ARE THE DATA DECLARATIONS FOR THE
DEFCOM FORM.

INFORMATION:
TYPE: (C-COBOL, IC-COBOL COPY) IC
SUBSYSTEM: UI-CI
CONFIGURATION ITEM ID:

DESIGNED BY: S. L. BARKER
START DATE: 2/25/83
FINISH DATE: 2/25/83

PROGRAMMED BY: S. L. BARKER
START DATE: 2/25/83
FINISH DATE: 2/25/83

UI SERVICES Include File Description

FILE NAME: DEFINE
PURPOSE: DEFINE form data declarations
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

UI SERVICES Include File Description

FILE NAME: FPCODE
PURPOSE: FORM PROCESSOR RETURN CODES
LANGUAGE: C

DESCRIPTION:
---

UI SERVICES Include File Description

FILE NAME: FPD
PURPOSE: FORM PROCESSOR DATA
LANGUAGE: C

DESCRIPTION:
---

DESCRIPTION
DATA DEFINITIONS FOR ALL FORM PROCESSOR (INCLUDING MONITER)DATA.

UI SERVICES Include File Description

FILE NAME: FPEMSG
PURPOSE: FORM PROCESSOR ERROR MESSAGES
LANGUAGE: C

DESCRIPTION:
---

DESCRIPTION

UI SERVICES Include File Description

FILE NAME: FPPARM
PURPOSE: FORM PROCESSOR PARAMETERS
LANGUAGE: C

DESCRIPTION:
---

DESCRIPTION: THESE DATA DEFINITIONS ARE USED
IN THE FORM PROCESSOR ROUTINES.

UI SERVICES Include File Description

FILE NAME: LDAI
PURPOSE: oracle Logon Data Area description
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

DESCRIPTION:
THIS IS THE DESCRIPTION OF THE ORACLE LOGON DATA AREA.

INFORMATION:
TYPE: (C-COBOL, IC-COBOL COPY) IC
SUBSYSTEM: UI
CONFIGURATION ITEM ID:

UI SERVICES Include File Description

FILE NAME: NTM
PURPOSE: NTM INTERFACE INCLUDE FILE
LANGUAGE: C

DESCRIPTION:
---

DESCRIPTION
INCLUDE FILE FOR NTM INTERFACE

UI SERVICES Include File Description

FILE NAME: ORACLE
PURPOSE: data delcarations for programs that access ORACLE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

DESCRIPTION:
THESE ARE DATA DECLARATIONS THAT ARE COMMONLY USED
IN PROGRAMS THAT ACCESS ORACLE.
INFORMATION:
TYPE: (C-COBOL, IC-COBOL COPY) IC
SUBSYSTEM: UI
CONFIGURATION ITEM ID:

DESIGNED BY: S. L. BARKER
START DATE: 1/17/83
FINISH DATE: 1/17/83

PROGRAMMED BY: S. L. BARKER
START DATE: 1/17/83
FINISH DATE: 1/24/83

UI SERVICES Include File Description

FILE NAME: ORCODE
PURPOSE: ORacle CODEs
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

DESCRIPTION:
THESE ARE COMMONLY PASSED ORACLE CODES.
INFORMATION:
TYPE: (C-COBOL, IC-COBOL COPY) IC
SUBSYSTEM: UI
CONFIGURATION ITEM ID:

DESIGNED BY: S. L. BARKER
START DATE: 1/18/83
FINISH DATE: 1/18/83

PROGRAMMED BY: S. L. BARKER
START DATE: 1/18/83
FINISH DATE: 1/18/83

UPDATED 8/25/83 TO ACCOMMODATE NEW MESSAGE LINE CODE

ORACLE ERROR

UI SERVICES Include File Description

FILE NAME: PSWORDI
PURPOSE: PaaSWORD form data structure
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

DESCRIPTION: THIS IS THE DATA STRUCTURE FOR THE PSWORD FORM.

INFORMATION:
TYPE: (C-COBOL, IC-COBOL COPY) IC
SUBSYSTEM: UI
CONFIGURATION ITEM ID:

DESIGNED BY:
START DATE:
FINISH DATE:

PROGRAMMED BY: S L. BARKER
START DATE: 1/20/83
FINISH DATE: 1/20/83

UI SERVICES Include File Description

```
FILE NAME: SRVRET
PURPOSE:   AS THE RETURN GIVEN A TABLE-FULL ERROR
LANGUAGE:  VAX-11 COBOL

DESCRIPTION:
------------
   MODIFIED 11/2/83 TO INCLUDE RET-CODE-5                          *
   MODIFIED 1/9/84 TO INCREASE ALL ERROR CODES TO PIC X(5)         *
     AND TO ELIMINATE ALPHA'S                                      *
   MODIFIED 1/26/84 TO ADD RET-CODE FOR GETUSR-NOT-SJCC            *
   SRV-SUCCESSFUL ADDED FOR GENERIC RETURN                         *
   MODIFIED 2/7/84 TO ADD ERROR CODES FOR ENTRY-NOT-FOUND          *
   MODIFIED 2/8/84 TO ADD WHTHST-NOT-SUCCESSFUL                    *
   MODIFIED 2/20/84 TO ADD TSTMOD NEW CODES.                       *
```

UI SERVICES Include File Description

FILE NAME: STDTYP
PURPOSE: STANDARD TYPE DEFINITIONS
LANGUAGE: C

DESCRIPTION:
---

DESCRIPTION
THIS FILE ENSURES THAT THE FOLLOWING STANDARD TYPES ARE AVAILABLE:

| | |
|---|---|
| FLOAT | - SINGLE PRECISION FLOAT |
| DOUBLE | - DOUBLE PRECISION FLOAT |
| LONG | - 32 BIT (OR LARGER) SIGNED INTEGER |
| LBITS | - 32 BITS (OR MORE) FOR BIT MANIPULATION |
| INT | - NATURAL SIZE SIGNED INTEGER |
| UNSIGNED | - NATURAL SIZE UNSIGNED INTEGER |
| BOOL | - NATURAL SIZE LOGICAL (ZERO ' NON-ZERO ONLY) |
| SHORT | - 16 BIT (OR LARGER) SIGNED INTEGER |
| USHORT | - 16 BIT (OR LARGER) UNSIGNED INTEGER |
| BITS | - 16 BITS (OR MORE) FOR BIT MANIPULATION |
| CHAR | - SINGLE MACHINE CHARACTER (REAL CHARACTERS ALWAYS POSITIVE) |
| TINY | - 8 BIT (OR LARGER) SIGNED INTEGER |
| UTINY | - 8 BIT (OR LARGER) UNSIGNED INTEGER |
| TBITS | - 8 BITS (OR MORE) FOR BIT MANIPULATION |
| TBOOL | - 8 BIT (OR LARGER) LOGICAL (ZERO NON-ZERO ONLY) |
| METACHAR | - 16 BIT (OR LARGER) AUGMENTED CHARACTER (SIGNED) |
| VOID | - FUNCTION THAT RETURNS NO VALUE |
| FORTRAN | - STORAGE CLASS FOR FOREIGN (NON-C) ROUTINES OR C ROUTINES WHICH ARE CALLABLE FROM FOREIGN ROUTINES |

SINCE NOT ALL COMPILERS SUPPORT USHORT, TINY, AND UTINY, THE FUNCTIONS

USHORT( ), TINY( ), AND UTINY( ) SHOULD BE USED WHENEVER REFERENCING THEM.

IN ADDITION, THE FOLLOWING UTILITY MACROS ARE DEFINED:

| | |
|---|---|
| LURSHIFT(N, B) | - UNSIGNED LONG RIGHT SHIFT |
| MAX(A, B) | - MAXIMUM OF A AND B |
| MIN(A, B) | - MINIMUM OF A AND B |

UI SERVICES Include File Description

```
ABS(A)          - ABSOLUTE VALUE OF A
STRASN(A, B)    - TRANSPORTABLE A = B FOR STRUCTURES
NULL            - NULL POINTER VALUE (0)
TRUE            - 1
FALSE           - 0
SUCCESS         - EXIT(SUCCESS) INDICATES SUCCESSFUL
                  COMPLETION
FAILURE         - EXIT(FAILURE) INDICATES ERRORS

THE FOLLOWING SYMBOLS SHOULD BE DEFINED BASED ON THE
                  COMPILER BEING USED:
USHORT  - COMPILER SUPPORTS UNSIGNED SHORT
TINY    - COMPILER TREATS CHAR AS SIGNED
UTINY   - CHAR IS SIGNED AND COMPILER SUPPORTS
                  UNSIGNED CHAR
VOID    - COMPILER SUPPORTS VOID
FORTRAN - COMPILER SUPPORTS FORTRAN
STRASN  - DEFINE APPROPRIATE MACRO
SUCCESS - DEFINE APPROPRIATE VALUE IF NOT 0
FAILURE - DEFINE APPROPRIATE VALUE IF NOT 1
```

UI SERVICES Include File Description

FILE NAME: UPDCOM
PURPOSE: UPDate COMmand form data declarations
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

DESCRIPTION: THESE ARE THE DATA DECLARATIONS FOR THE
UPDATE COMMAND (UPDCOM) FORM.

INFORMATION:
TYPE: (C-COBOL, IC-COBOL COPY) IC
SUBSYSTEM: UI-CI
CONFIGURATION ITEM ID:

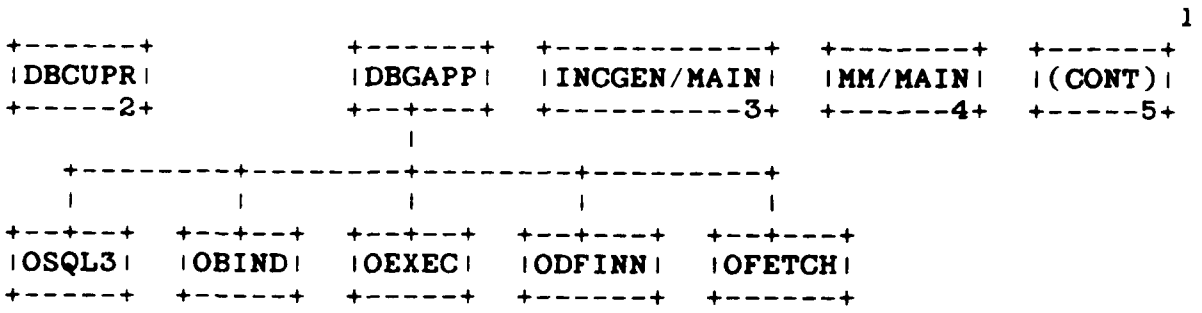
DESIGNED BY: S. L. BARKER
START DATE: 2/25/83
FINISH DATE: 2/25/83

PROGRAMMED BY: S. L. BARKER
START DATE: 2/25/83
FINISH DATE: 2/25/83

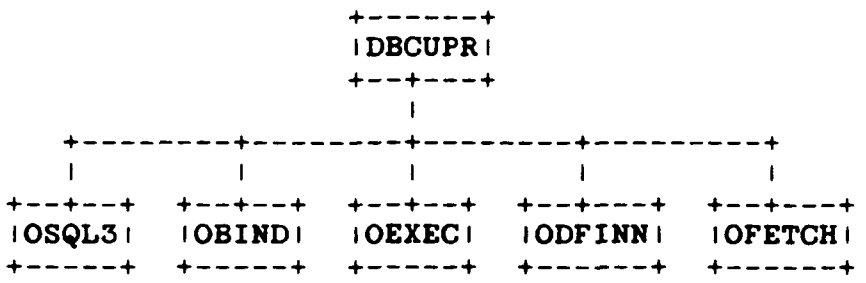
3.10.10 Hierarchy Chart

The following hierarchy charts show the relationships between all of the modules mentioned in the above documentation. A module may call a subroutine several times within its code, but the call will only be shown once as a single relationship on this hierarchy chart. All modules shown at the top of the first page are considered Main Programs as described in section 3.10.1 above.

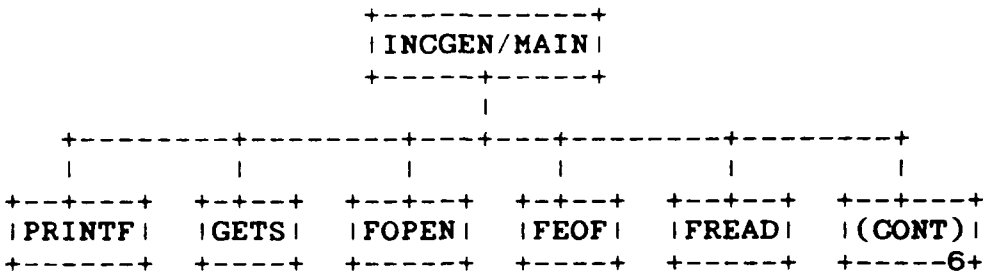
There is an internal paging scheme as marked by the numbers in the upper right corner of each page. An index after the last page of the chart shows where a routine and its calls are first defined. If a routine has no page reference, it either makes no calls or is an external routine. A continuation box on the end of a tree limb shows where that the tree continues on the page numbered mentioned. A number in a box with a routine name points to the page where the routine is further defined within the hierarchy tree. If there is no number in a box, the routine either makes no calls or is an external routine.


1
DBCUPR
2
DBGAPP
INCGEN/MAIN
3
MM/MAIN
4
(CONT)
5
OSQL3
OBIND
OEXEC
ODFINN
OFETCH

2



3



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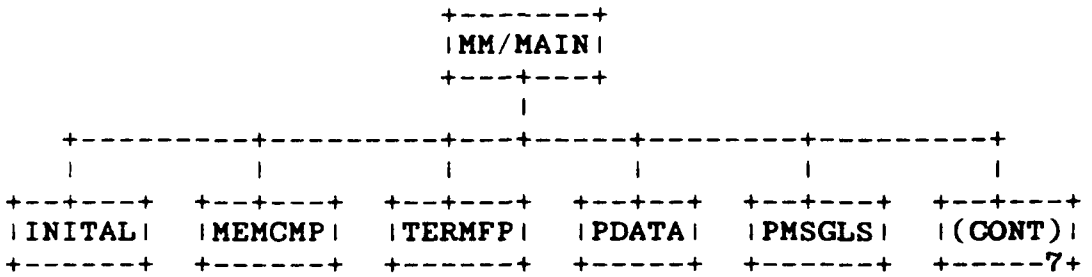
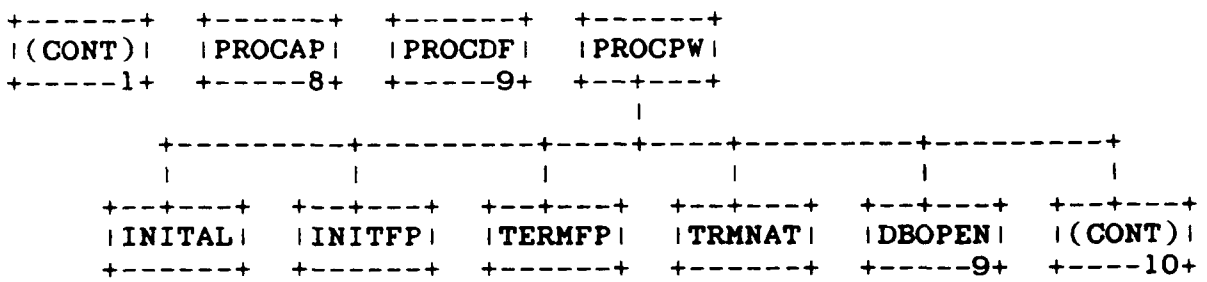
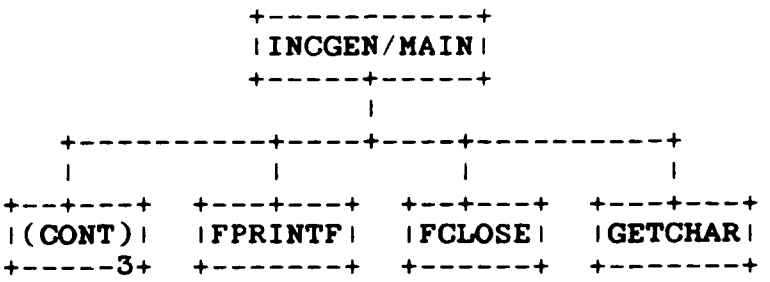


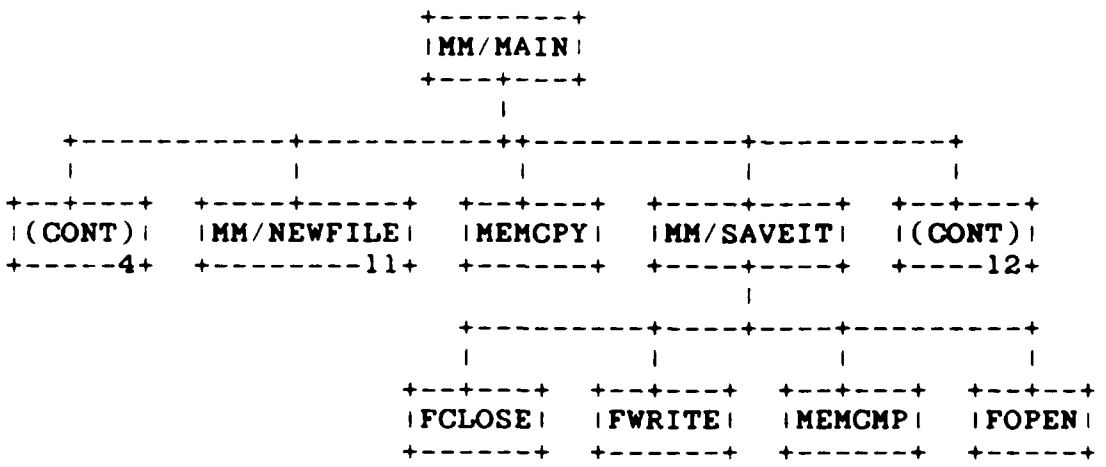
5

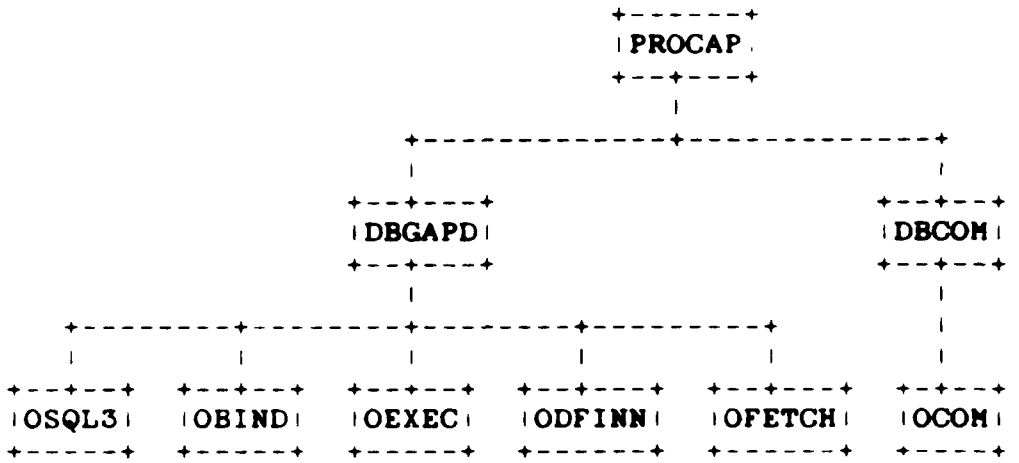

(CONT)
1
PROCAP
8
PROCDF
9
PROCPW
INITAL
INITFP
TERMFP
TRMNAT
DBOPEN
9
(CONT)
10

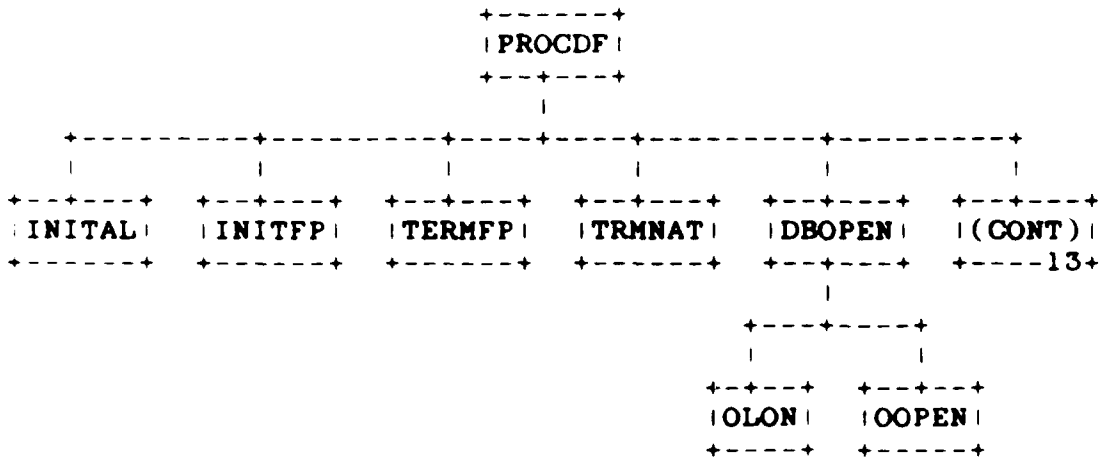
6



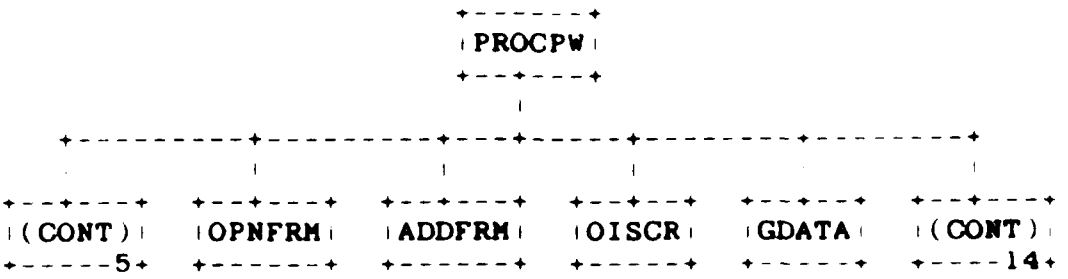
7


MM/MAIN
(CONT)
4
MM/NEWFILE
11
MEMCPY
MM/SAVEIT
(CONT)
12
FCLOSE
FWRITE
MEMCMP
FOPEN

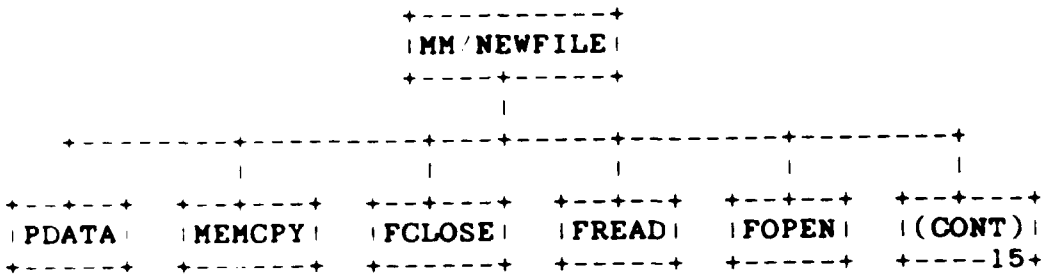

PROCAP
DBGAPD
DBCOM
OSQL3
OBIND
OEXEC
ODFINN
OFETCH
OCOM


PROCDF
INITAL
INITFP
TERMFP
TRMNAT
DBOPEN
(CONT)
13
OLON
OOPEN

10



11



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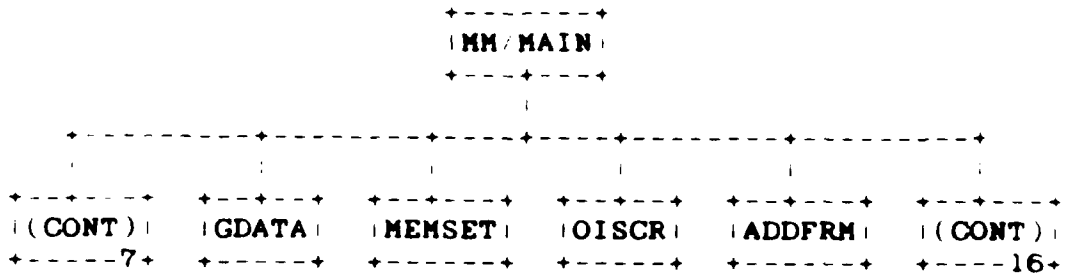

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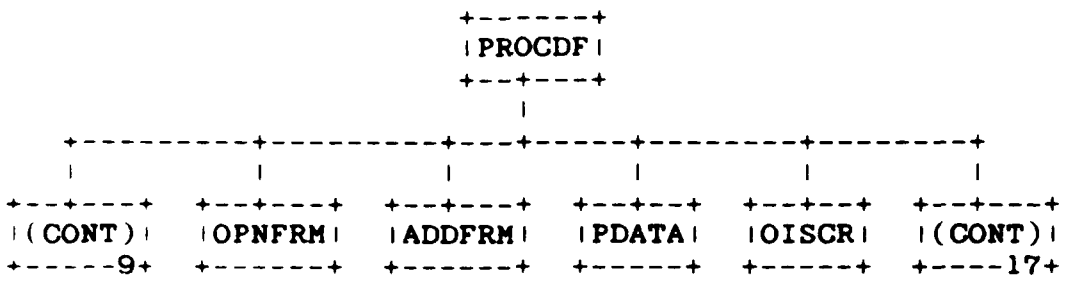

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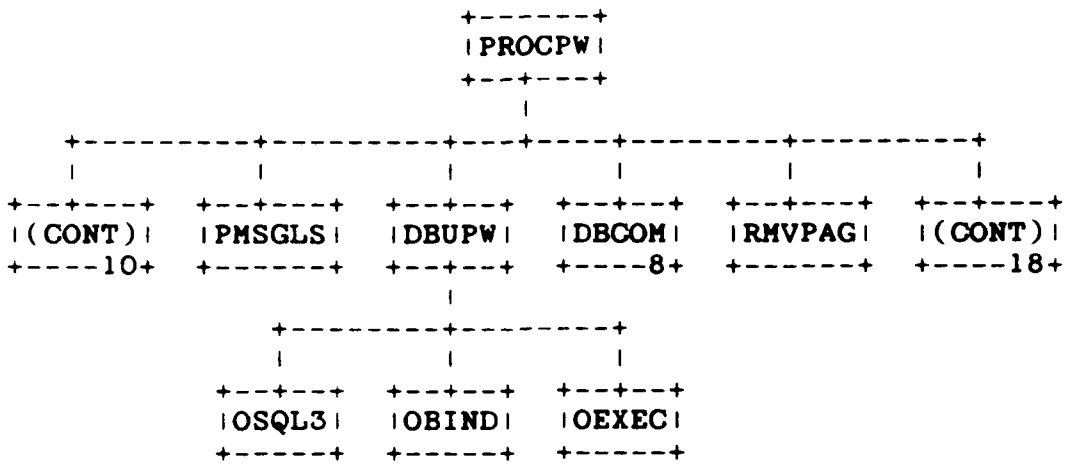
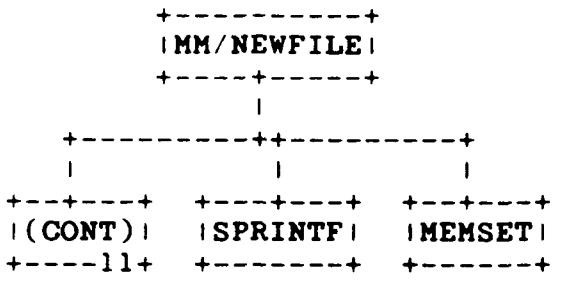
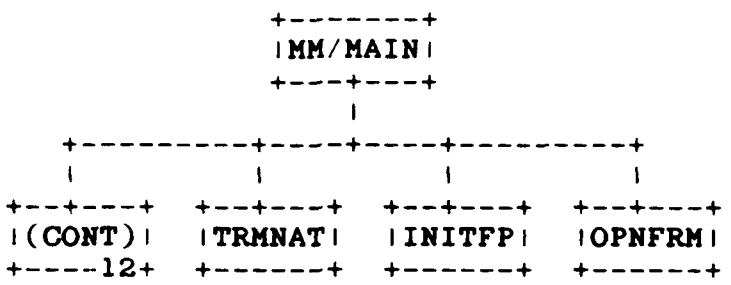

PROCPW
(CONT)
10
PMSGLS
DBUPW
DBCOM
8
RMVPAG
(CONT)
18
OSQL3
OBIND
OEXEC

15



16



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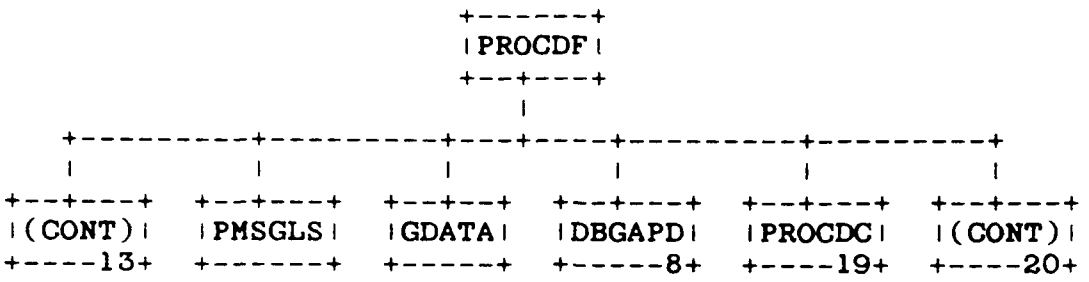

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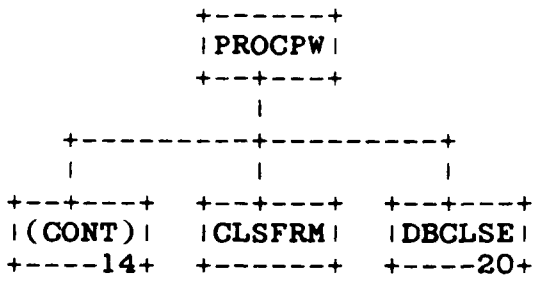
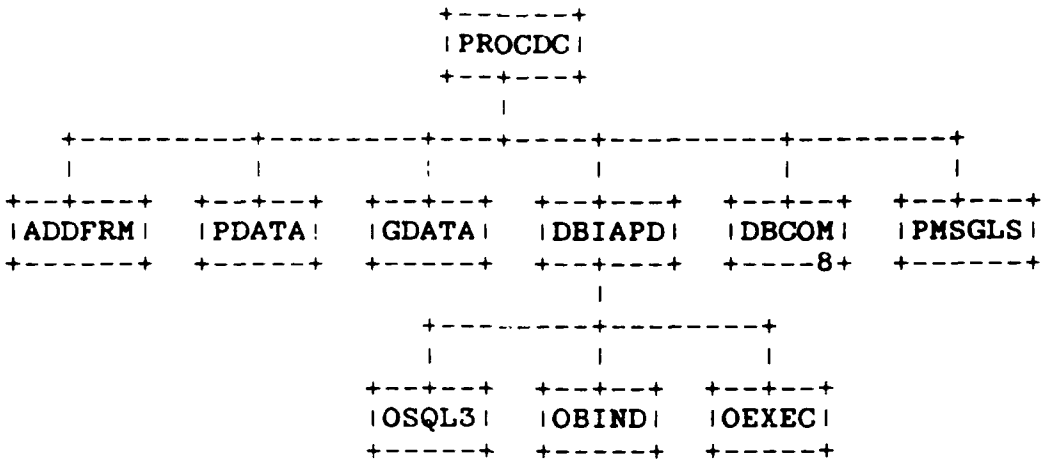
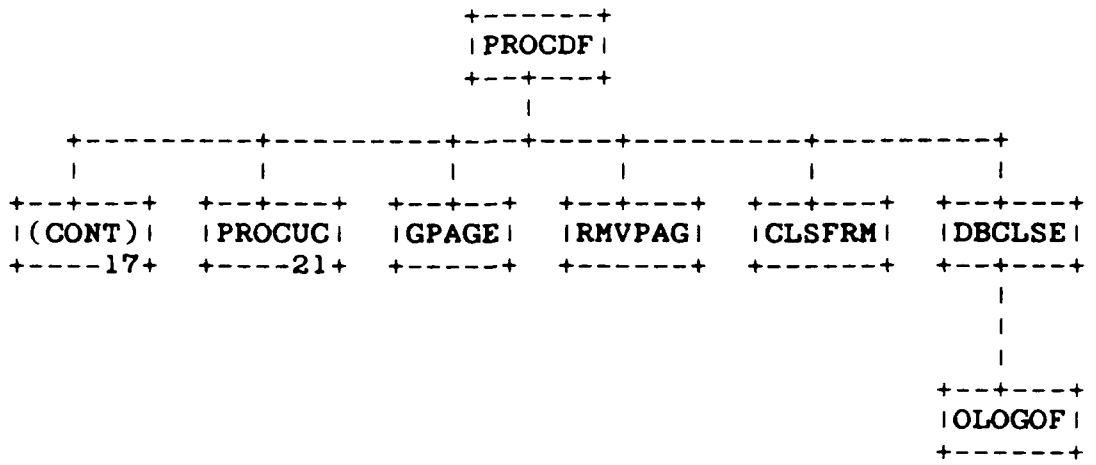
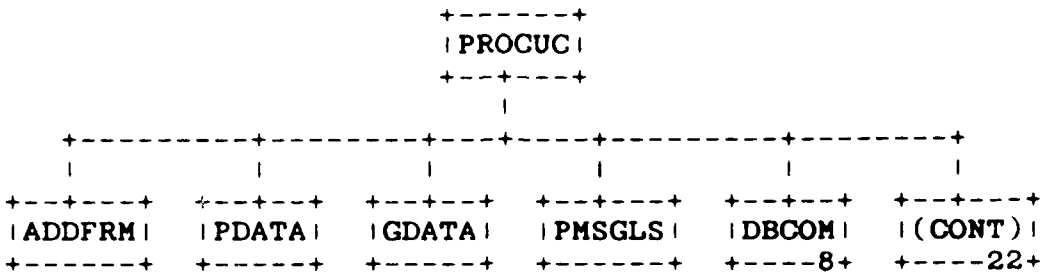



PROCDC
ADDFRM
PDATA
GDATA
DBIAPD
DBCOM
PMSGLS
OSQL3
OBIND
OEXEC

20



21



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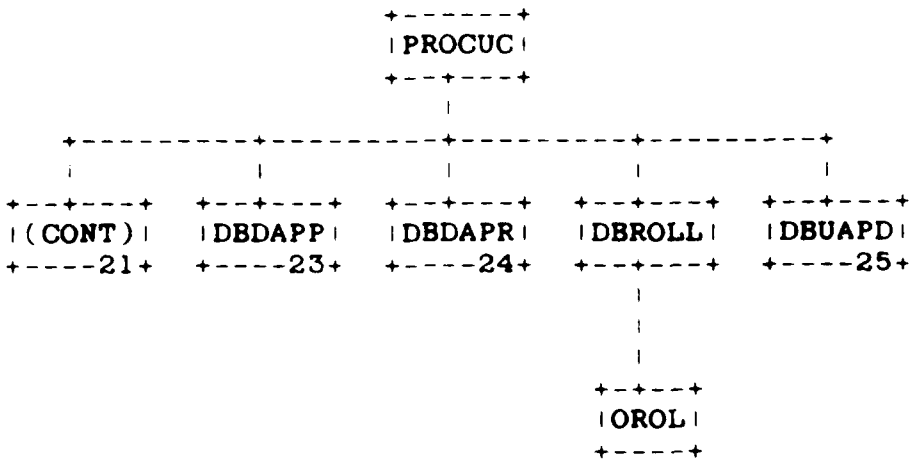

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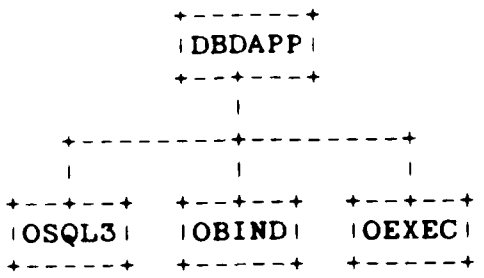
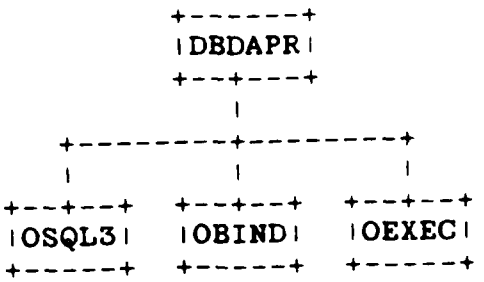
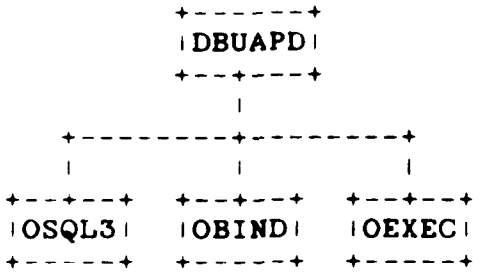



DBDAPR
OSQL3
OBIND
OEXEC

25



## 3.11 Program Listings Comments

This information is contained in the Module Descriptions in section 3.10.

# SECTION 4

# QUALITY ASSURANCE PROVISIONS

## 4.1 Introduction and Definitions

"Testing" is a systematic process that may be preplanned and explicitly stated. Test techniques and procedures may be defined in advance, and a sequence of test steps may be specified. "Debugging" is the process of isolation and correction of the cause of an error.

"Antibugging" is defined as the philosophy of writing programs in such a way as to make bugs less likely to occur and when they do occur, to make them more noticeable to the programmer and the user. In other words, as much error checking as is practical and possible in each routine should be performed.

## 4.2 Computer Programming Test and Evaluation

The quality assurance provisions for test consists of the normal testing techniques that are accomplished during the construction process. They consist of design and code walk-throughs, unit testing, and integration testing. These tests are performed by the design team. Structured design, design walk-through and the incorporation of "antibugging" facilitate this testing by exposing and addressing problem areas before they become coded "bugs."

END

8-87

DTIC